

DIALOGUE

BETWEEN

Alkali and Acid:

CONTAINING DIVERS

PHILOSOPHICAL and MEDICINAL CONSIDERATIONS,

WHEREIN

A late Pretended New Hypothesis, asserting
ALKALI the Cause, and *ACID* the Cure
of all Diseases; is proved Groundless and
Dangerous.

BEING

A Specimen of the Immodest Self-applause,
Shameful Contempt, and abuse of all Physicians,
gross Mistakes and great Ignorance of the Pre-
tender *John Colbatch*.

By *THOMAS EMES*, Chirurgo-Medicus.

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The P R E F A C E to the Reader.

ALtho' I have most commonly found the Pretenders to New-Light, and rare Inventions (so common now a-Days) no more but Pretenders; yet having something of Curiosity, shall I call it, or Vanity, to be inquisitive for Truth in such Pretensions; the noise of a New-Light of Chirurgery, and a New Method of Physick Built upon Principles directly contrary to, and overthrowing all whatsoever has been done by the whole World of Physicians, could not but excite in me an Attention, and cause me to enquire into the Truth of such a Report. But when I had Read over one or two of those Books which at length gave occasion and Matter to the following Discourse (tho' they contain something, I confess very Uncommon) I found nothing which could give me the least Stomach to another Meal of the same, or Appetite to any New-Dish, afterwards presented by the same Author. I had found his Sauce sour enough, and the Dishes Garnish'd with Oranges and Lemons; but the Meat it self so Raw and Insipid, I set it by as a sort of stuff I had for ever enough of. But sometime since, conversing with divers Persons having little, or no Skill in Medicinal Cookery, and finding them highly Commend as choise Viands, those things which I knew would be but of bad Digestion, and very apt to breed ill Humours: And considering that it becomes an Honest and Generous Physician, as well to Advise what things may preserve, or be prejudicial to the Health of his Neighbours, as to heal their Diseases; I begun to think, whether I was not oblig'd in Duty to Mankind, as well to Discover the evil Practice of another, as to labour to act rightly myself. And forasmuch as I know, an Unreasonable and Rash Method of Physick, tho' it hurts not Physicians, may more than endanger the Lives and Healths of the People, tho' not in the Theory, yet in the Practice which is made upon them, I was perswaded once more to Read over what I had before, been sated with, and what farther has been offer'd by the Author of the pretended New-Method, and to transcribe, and make some Remarks upon some of the chief Things whereby he endeavours to perswade the Truth of what he calls his New-Hypothesis: Which when I had done, I could not but yet more admire what it was in this Author, that Persons of any Literature and Sense, whether Young Physicians, or Gentlemen found so taking; something very Uncommon, as I said, there is. But what? Ἐπεὶ οὖν τὸ ἀνέγκειν σιμαίνει,
CONFIDENCE the sign of Ignorance of Art, as the Noble: Cous saies: Yet which methinks is strangely accounted now-a-days so great a Qualification, and particularly in a Physician, that it can atone for, Yes, and set off, all the Imperfections, and Deformities of bad Language, want of Reason, Reiterated Tautologies, Contradictions and Calummies, the Author of a Quack Book, Bill, or Speech, can be guilty of. I was a little uneasy to think that the Judgment of our Age seem'd so declin'd it such, and such Persons: But yet they might have embrac'd their Nonsense, and hugg'd their false Juno long enough for me, Sed quod luditur de corio, imo de vita Humana, but that her Embraces I knew, might prove unwholsome to them. Which I think, will appear in the following Discourse, to all that will but grant that the Art of Healing is grounded upon Reason, and Experimental Philosophy.

The Preface to the Reader.

The way of Dialogue I chose to Write in, I think, will not only be less tiresome, but more easie and profitable to my Reader; since I have Transcrib'd from my Author Word for Word, all that I take occasion to Speak too, for the most part under the Person of Acid, but what farther Excerptions I Restleſt upon, Rebearded by Alkali, you will find noted in Italick Characters, so that you may save the Trouble or Charge of turning to his Books, in Reading mine. Wherein I assure you, I have not abused him. or alter'd his Sense in a Tittle; that I know of, or added, more than some few Words of Connexion, and the entrance of the Discourse, which the Justest Reader, I suppose, will pardon as a small Transgression against the Man that I never saw, or owe any more Ill-Will too, than him that I never heard of, but wish him really, as great (if it were possible) as he saies he is, and would have us esteem him. 'Tis one of the Main Poynts of my Religion, tho' I am a Physician, That I ought to be a Friend to all Men; but I am somewhat of the Opinion of Plautus, Amicuum non castigare ob merita, mala noxia imane et facinus, I think it a Fault, not to reprove those Errors, even in a Friend, that may be of evil Consequence. But here are Errors, that may endanger even the Lives of better Men than him that I reprehend, if so unfortunate as to be entic'd by the love of sharp Sawces, &c. to fall into the Hands of so Bold a Medicaster. The exposing of whose Faults, I know, may be in some respect to his Private Damage, but the Publick-Good, ought to be esteem'd greater than the Private-Interest of any Man. Salus enim populi Suprema lex est. Yet if things be Weighed in the most just Ballance, I think it may be found, That I have said nothing against our Doctor, or which, may not be for his real Benefit, whom I look upon as a Sick-Man, and am so far of his own Opinion, as to think his Disease cannot be Cured without sharp Medicines; which tho' he may as little like in the Swallowing, or Application, as some of his Patients may the Effects of his Acid-Doses, I hope yet it may be for his Health hereafter. But there are so many things in my Author, which are the Breakings forth of Vicious Humours, I am doubtful whether I shall be reckon'd culpable for giving him so many, or so few Doses, and applying my Corrosives to so many, or so few of his Sores. I fear you will be weary of seeing him Dress'd: Yet I hope no Physician, or Chirurgeon, no, nor Gentleman, or Lady, but may see something worth their while; being if not so pleasant, yet of useful Consideration. Therefore I shall no longer detain you at the Door of my Lazar-House, but take you in to hear, and see, the Badness of my Patient, and what sort of Medicines I have Prepared for him. And tho' you will hear him Talk sometimes Talk like a Mad-Man (his Disease being much in his Head) and abuse those that have done for him, as he has always done, calling all his Physicians, Scoundrels, except Dr. Tuthil who got a little into his Favour; yet you need not fear if you don't come too near him, any more than I do, tho' I am resolv'd to handle him closely, that if possible the poor Young-Man may have the benefit, and the Credit of so great a Cure. But however it happens, I confess, I am almost asham'd of Preparing so many Remedies for so mean a Patient: But long Bills are Fashionable, and my medicines given Gratis.

A

DIALOGUE

BETWEEN

ALKALI, and ACID.

Al. **W**ELL met Mr. *Acid*, whither are you hurrying so fast, to some Heroe run through the Lungs, or the Heart?

Ac. I should hardly stay to tell you Mr. *Alkali*, but that I am engag'd to oppose you where-ever we meet, you *Principle of Death and Corruption*. I am always provok'd by you, you have done so much mischief in the World: And now to your farther reproach, I have a fresh instance of your badness, by a Messenger from my Lord *Lazington*, whom you have plagu'd with a fit of the *Gout*, and that a desperate one if I come not in time to his assistance, none can help him but I, and he thinks it 7 Years e're I come to him.

Al. You are very sharp Mr. *Acid*. I sometime since heard indeed, that you have reproach'd me in all Companies, even in Coffee-Houses, as well as wrote Books against me, but now I find it true: I am glad I have met with you, to tell you, you have scandalously reported divers things of me, which if you can't prove to my Face, I shall not easily put up the Injury, nor part with you willingly without Proof, or Submission. Let my Lord *Lazington* roar a little, you will be the welcomer when you come; and I know you can tell how to excuse your delay; some Duke or other had sent for you before, and perhaps my Lord will do as well without you. Let us try whether you can maintain your Charge: You call me the *Principle of Death and Corruption*, and I hear you say, I am the *cause of all Diseases*, and that you alone are the Dr. that can do any thing considerable in the Cure of them, and that by destroying and expelling *Alkali*: And this you make an Hypothesis of, and call it a new one, of your discovery.

Ac. I am so far from denying what I have said against *Alkali*,
B that

that I continue still to assert my Hypothesis. That all the Alkali in the Blood is most certainly an Excrement in a way of being carried off by some of the Emunctories, and when any of the Emunctories chance to be stopp'd, that the Alkali has not room to pass out, then there is a Disease. And the matter of all our Distempers is the same. And whereas Acids are contrary to Alkalies (there being a conflict between them where-ever they meet) their being given in due proportion, will lessen the matter of the Distemper, and in time, totally extirpate it. *Similia similibus gaudent, & contraria contrariis curantur.* And I am so absolutely confirm'd in the truth of my Hypothesis, that I am sure it is not in the power of any one to overthrow it. Nay the Hypothesis on which I build, I am sure is true. And I have in all my Writings, Truth for my Guide. But the opposition I have met with, hath been almost insupportable. Truth at its first appearing never wants Opposers. But the New Doctrine I have advanced has gain'd so much Ground, that few Authors in their own Life-time, have scarce seen the like. This unwonted and unexpected Encouragement, has fill'd me with a sense of Gratitude, to me inexpressible. Reason is the true Touch-stone, by which we ought to Examine every thing; and I have never advanc'd any thing, till weigh'd in the Ballance of my best Reason, and yet, lest Reason should deceive me, and I so impose on the World; I have always join'd Experience to it; so both being conjoin'd, I could not well deceive my self, nor lead others into Error. That Prodigy of Nature. Mrs. Anne Baynard, said in my hearing, that Reason was that Eternal Standard God Almighty, as a Ray of his own Image has impress'd upon Man, to the election, or dislike of what may hurt, or succour him; and where this is rais'd and improv'd, makes him an Angel, where sunk and depress'd, a groveling Brute.

Al. I find your Confidence, Mr. Acid, as great as I have heard it reported, which is no Argument to me, that you are in the right Confidence and Ignorance being usually Companions: And I am the more perswaded it may be in the power, of some one or other to overthrow your Hypothesis. If you were sure of the truth of it, I confess, it would be impossible it should be found untrue: But I suppose you only fancy your self sure. That you have Truth for your Guide, I suppose (if you know what you say) you mean, you have some certain Truths, as Rules to guide you to the invention of others: But perhaps, you may as other fallible Men, take some things for Truths that are not true, or not know how to use them as Rules, if they are so. What opposition you have met with I know not, it seems it was what you could hardly bear, I doubt you have thereby confess'd, your strength to be but weak. Why Truth should always have Opposers at first, I see

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not, unless when it is not clearly demonstrated, as your Hypothesis (to let you suppose it true) is not, as you will go near to find, before we have done. And as for the ground, you say your new Doctrine has gain'd in your (but yet short) life-time, beyond the Inventions of other Authors, which so surreits your Heart with Joy, I think no body else sees it; for I could never yet meet with any one Ingenious Man of your Opinion. And if any few unwary Tyros, or Person not studious of Nature, have been pleas'd with your Fancies, I believe, if they will but use their Reason, which you say is *the Touchstone of Truth, by which we are to examine all things*; they will find Reason to alter their Opinion, and find their Master Acid's best reason was but a false ballance, and did indeed deceiv^e him, and that his experience was but mistaken experience, and so impos'd upon the Master, and Scholars too. But that Reason is an eternal Standard, I do not see; tho' the prodigious Mrs. Ann Baynard said so: I rather think her and you, too prodigious Metaphysicians; For I take Reason to be peculiar to Creatures, and that Creatures and whatever belongs to them are not Eternal, unless in the same sense, as an ignorant pretender in Physick in the *Beaux* Language, would be call'd an eternal Quack. Neither can I see by any of your reasonings Reason so improved in your self, as to give any body any ground to take you for an Angel. Mrs. Ann Baynard might be a great Wit for ought I know, and Wit and Beauty in a Woman, might possibly make a youngster mistake her even for a Goddess, and to be said to be Witty and Pretty would please most Women, and by pleasing the Women, a Doctor may be likely to meet with an Angel sometimes you know Sir.

Ac. The Doctrine I have advanced is so directly contrary to every thing that has been wrote yet, it is enough to startle any young Man, nay some old ones too; but I have so enquir'd into Diseases, as to be altogether certain of the Truth of my Hypothesis, but not so as to make People Immortal, which I believe some expect from me: But let People lay aside prejudice and set themselves to make Experiments, I am sure they will lay aside their old Notions, and embrace my new Hypothesis, and I am morally certain that my new Doctrine of *Acids* at present so much decry'd, will soon obtain the publick vogue, carrying a self-evidence along with it, and some People will be so enamour'd with it, as to use *Acids* with as much reason, as others now use the *Cortex*; which has been brought so extravagantly in vogue, that some use it in all Distempers, and I believe it will in time, be put into Plasters to Cure Corns. By this may be seen the instability of Humane Nature that is more govern'd by Fancies than by Reason,

son, so that what is to day condemn'd is to morrow in great value. But the Doctrine of *Acids* being a thing of Universal extent, it is impossible any one should do so much mischief with them, as with the *Cortex*.

Al. If your Doctrine is directly contrary to every thing yet wrote, it is very likely to be contrary to Truth; for doubtless there has been some Truth wrote before. But I am not at all startled at your Doctrine Mr. *Acid*, tho' I confess, I am neither very young, nor old. What a Novice, or an Old Dotard may be, I know not; but if any thing be startling, it is your Impudence, which indeed seems Monstrous: That a *Mushroom* in Physick should so confidently oppose all that has been yet wrote by all the Learned Physicians of all Ages, and pretend to have so enquir'd into Diseases since Yesterday, as to be certain that the long Study and Practice of all other Men gave them nothing but mistakes; but your little time has produced absolute certainty. But truly, notwithstanding your Opinion of your self, I dare say no body expects Immortality from you. As for prejudice, you would have us lay aside, I believe I laid it aside, for some time before you began with the study of Pharmacy, and have ever since made Experiments, and I believe, have had more opportunity, as well as time, to carry on a course of experimental Philosophy, than your self; (not to disparage you) yet I cannot lay aside all my Notions thereby gotten, and embrace your new Hypothesis. Your moral Certainty that it will obtain the Publick Vogue, is no better than to say, an uncertain certainty. Nor is your Doctrine self-evident to any but Mr. *Acid*'s own sharp self; whose Eyes perhaps are Microscopes in comparison to other Mens. But there is no fear, People will be enamoured with your Hypothesis it has so soure a Countenance. But the instability of Humane Nature, (I confess) is such, and some other Men are so much govern'd by Fancies as well as you, that possibly *Acids* may be used with the like reason, and extravagance as some have used the *Cortex*; but they will hardly mix them with Plaisters. But tho' *Alkalies* should be to day wholly condemn'd, perhaps they may be to morrow in as great value as ever. And if it be not possible to do so much mischief with *Acids*, as with the *Cortex*; yet I believe, some Persons may find enough done with them to dissuade us from using them as you would have us: But I am certain, a confident Empirick may do a great deal of mischief with *Acids*, *Alkalies*, *Cortex*, or any thing.

Ac. People must long since have known my Hypothesis, or they must not; if they have not they have groped in the dark, and cured Diseases as a blind Man may catch a Hare; if they have known it, their giving *Alkalies* is an Argument, they have not acted like

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like honest Men. But no one can charge me with any thing selfish, unless it be to leave a Name to Posterity. I want University-Glosses to polish over my Discourse, but Truth like Diamonds will sparkle among Pebbles, yea appears best naked; and I am sorry, I am forced to promulgate this Doctrine in Terms that look so like self-commendation but I have been too long meal-mouth'd, whereby Truth has suffer'd, and my over modesty has caus'd me to be oppress'd: But a constant series of success has rais'd me many Friends, and nothing but an extraordinary Providence could have supported me against so many Enemies: All the Chirurgeons in the World, and after the Physitians, but from these, I have had the fairer play, and they grow more civil, and among the Chirurgeons I gain Friends daily.

Al. How should People have known your Hypothesis long since, when it is not long, since you conceived it, and brought it forth; pray you Sir excuse them: And let us come to the tryal of Skill, whether your Hypothesis be well grounded or no, and see whether you can prove, that all People that have not known your Hypothesis have groped in the dark, and cured Diseases either by a very rare accident, or not at all, that you are the only Man God has given Eyes to, till which is done, I cannot but look upon you as a Person of great Impudence, to accuse all the World of Learned PHYSITIANS as Fools, or what is worse, as Knaves, and uncommon Arrogancy to assert your self the only Wise, yea and honest Man pretending to Physick; and that you have nothing selfish in you, but to leave a Name to Posterity. Truly methinks, you are as selfish as any body: But as for a Name to Posterity, it's pity you should want it, I'll help you, that you may be sure to have it, and not for nothing. I wish you could have written in *Latin*, that all the World might have known you. Tho' you say, you want University-Glosses, you are Rhetorical enough indeed Sir; for you have abundance of Hyperboles, nor want you other choise Foiles to set off your Diamonds, nor are your Truths naked, but so dress'd up (if you have any) that I cannot see the Faces of them. But you commend your self so much, it looks not like force put upon you; nor do you seem so meal-mouth'd, or over modest as you say you are, but speak roundly enough. It's pity Truth should suffer, or you be oppress'd for your Virtue, Poor young Man: but it may be hoped you will grow stronger. But you have had extraordinary Helps, constant Success, and uncommon Providence has got you Friends, and supported you against so many Enemies, all the Chirurgeons in the World, and after the Physitians. Has your Fame spread so largely? Certainly this must be by some uncommon Providence, for I cannot find, that half

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half the Chirurgeons, or Physicians in *England* have heard of you, (but I will endeavour that they may) much less all the World of them, when your Books are wrote but in your own Language. But prethee *John* let me hear no more of these brags, but lets come to the contest: I'll give you as fair play as you can well wish, and will be added to the number of your Friends, if possible.

Ac. In all Diseases, Physicians have unanimously agreed, that *Acids* have abounded; and if to such a Degree, that their *Alkalies* could not conquer it, then the Patient Dy'd. And as for *Alkaline* Medicines, I dare be positive, they never yet Cured any one Distemper; but frequently have done a great deal of mischief. If any ever receiv'd any advantage by them, I dare be burnt. If they be given in acute Diseases, and Nature be strong, she throws off the load in spite of them; if weak, they add to the load, and she falls under it. In Chronical Diseases, such as the *Gout*, poor Mortals are let alone to languish under the Distemper. But you may say, If my Hypothesis be true, how have others, mistaken Physicians, Cur'd Diseases? I answer, I own they have Cur'd some Diseases, but they could never tell how: They have given *Steel*, *Antimony*, and other Preparations, without enquiring into the nature of them, supposing them *Alkalies*; when they at the same time are *Acids*; as also many Vegetable Productions, and so Cur'd Diseases, they being *Acids*.

Al. Truly *John*, your Discourse begins to grow nauseous: You are not yet Forty Years old, and could you have spent Thirty of them in reading the Writings of Physicians, you could not have read the Tenth part of what they have Writ, much less have known, what success they always had in their Practice. And as positive as you are, I believe, I shall give you matter of Fact, as well as Reason, enough to convince any modest Man, that Diseases have been Cur'd by *Alkalies*, and when you are convinc'd, I would counsel you, to burn your Books, rather than your self, as daring as you are. And for shame forbear to accuse all Physicians at this rate, either never to have Cur'd Diseases, or now and then to have done it ignorantly, they knew not how, by giving *Acids* at unawares. Do you think others have not took as much pains to know the nature of *Antimony*, *Steel*, and Vegetable Productions as you? Had none of them any way to know *Acids* from *Alkalies*? *Van Helmont*, whom you sometime, call'd your Master, saies, he wrought Forty Years with great labour and charge (and others have done the like) in Analyzing the *materia Medica*. Fye *John*, fye! prethee give over, I Believe, you will sometime find you have done your self no Credit, nor kindness to cry your self up, and cry down all Physicians at this rate,

Ac. I

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Ac. I have made reflections on Physicians indeed, but they are principally Foreigners; they all to a Man, asserting the Doctrine of *Alkalies*. What I have said, is not to reproach the Physicians of our own Nation, who are many of them; as Great Men as ever were of the Profession, and this City abounds with such; but my design, is to undeceive Young Physicians, who have been impos'd upon by Foreigners, and to excite them not to rely upon Men, who have broach'd the Chymera's of their own Brain, without making Experiments, whether their Notions were true, or false; my design being, not to Reflect upon that Noble Society, the College, the Glory of our Nation, and of the whole World; but I have the greatest Reverence and Respect for them.

Al. Mr. *Acid*, you do not know what all Foreigners have done, neither do they deserve your reproach more than the Physicians of our own Nation, or are they less Men: You cannot well be ignorant, that some of the College you applaud so, are Foreigners, and as deserving as any of the rest. Nor have Foreigners impos'd on Young Physicians, more than those of our own Nation; nor have they been always Men more full of Chymera's, or less acquainted with Experiments; Is every one acquainted with the Medical World must acknowledge. Nor was Young Mr. *Acid*, the fittest Man to undeceive Young Physicians; he should have left it to Older Heads, or have stay'd a little longer. Was there none of the Fathers of the Noble Society, whom after you had abused in general, with all Physicians, you now sweeten up to, as the Glory of the whole World. I say, was there none of them that understood the Virtue of *Acids*? Or, none of them so kind as to undeceive the Youngsters, that they left it to you? Or, had none of them such a Capacity to Write as Mr. *Acid*. I must tell you truly Sir, you are no Credit to them, of what profit soever you may be, notwithstanding your Professing Reverence and Respect for them. But I believe, after all your bouncing of a New Hypothesis, we shall find, that Physicians have used *Acids*, knowing them to be such, long before you were Born; thinking rightly, that neither *Acids* nor *Alkalies* alone Cure Diseases; but a Physician using them all with other things, when, and where he sees occasion. And to convince you, and shew you how apt you are to contradict your self, (your Memory as you have sometime confess'd, being a very treacherous one) To confirm the truth of your Doctrine, you told us, Dr. Jones commended *Acids* in divers Diseases, a Man of such clearness of Reason, that you never heard him mention any thing, but he was fully able to demonstrate it. But if what you say of him, be true, and your Doctrine may be suppos'd not false; I think he is more like to be the Author of it than you, tho' he lets you take the Name;

and I would advise you, to get him to demonstrate your Hypothesis; for I am sure you have not done it. And Dr. Baynard had also wonderful Success, and his Practice run upon Acids, and those Gentlemen embrac'd Acids out of a Life-saving principle (you say) in opposition to the multitude. Likewise you tell us at another time, that, Dr. Watson us'd Acids for Ten Years, which was before the birth of your Hypothesis, if you were the Parent of it. Nay, you tell us Oyl of Vitriol is commended in *Theatro Chymico*, pag. 86, & 87. Vol. I. And your Master Helmont by advising a Man to take two Drops of Oyl of Sulphur every Meal, preserv'd him free from Diseases to an Old-age; which advice was given, long before you were born, and doubtless he knew, Oyl of Sulphur was an Acid. Nay, Riverius also comes in for a Smack, by your leave, when you are kind or forgetful, Curing a confirm'd Phthisis with Conserve of Roses and Oyl of Sulphur. Here are Foreigners Sir, tho' you say, All of them to a Man, asserted the Doctrine of Alkalies. But, your treacherous Memory, once gave away all your glory; when you were almost positive, that there was no Physician in Christendom, of any business, but had made use of Oyl of Vitriol, that dangerous Acid, tho' asserters of Alkalies. But then you sting them in the Conscience for such practice, how they can answer for it you can't tell, that if Acids are the Cause of Diseases, how they dare with a good Conscience give the most temperate Acids, you can't understand. But I'll undertake to be Casuist for them, for once; seeing you can't resolve it. They used Acids, when they saw occasion, with better reason than you do, and Alkalies, when they found the nature of the Cases requir'd; being wiser, than to think Acids alone, or onely Alkalies the Cause of all Diseases. And to name one for instance, to convince you of the truth of the matter, Frederick Hoffman Publish'd an ingenious Treatise, 1689. against the fancy of some few, who would make Acid and Viscid the Causes of all Diseases; wherein he commends Acids in many Cases, yet confesses, that Acid and Viscid are the Causes of many Distempers. *Certissimum porro est* (saies he, pag. 5.) *Et curat practicum obrium acidum, & viscidum plurimorum morborum fomitem, ac mineram existere*, and gives several Instances and Arguments to make it appear, and that a Physician cannot be without Alkalous Medicines, *Et sane* (saies he again, pag. 10.) *nisi velimus dissimulare, nullus gratosus medicus facile carere potest salibus istis Alkalinis Volatilibus, interque paucis tenent Spiritus Oleosis Sylvi: Spiritus salis argemiaci vinosus cum oleis aromaticis, & carminativis varie essentificatus: Spiritus Vini a sale Vol. C. C. abstractus, Salia fixa, & illorum solutiones, Lapidis Cancrorum, Coralia cum lixivio salis Tortari imbibita & imprimis salia fixa Sulphuri metallico amicissimo conjugio juncta, &c.* And concludes, *Acidum, ac viscidum motui sanguinis nimis hostile; pluri-*

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morum morborum causam evadere posse, & contra Medicamenta Alkalina acidum destruentia decenter exhibita generosissima magnorum morborum existere praesidia. And this was wrote several Years before your Essay (as you call it) concerning *Alkali* and *Acid*. Where are you now *John*?

Ac. It is true. Some few other Physicians have used *Acids*, but the assistance I had from them is inconsiderable as to the establishing my Principles, and if I have made any good steps, it is owing to my own industry; for tho' I was not bred at University, I have taken as much true pains to inform my self in all parts of Physick, perhaps as any Man ever did: And spent as much Money to qualifie me for the practice of Physick as most Men, who have spent their time in the Universities, and I have had ocular demonstration for my Money, when as some of our University-Men have had only the fusty Notions of Old *Aristotle* for theirs. And tho' I have not said all that is to be said in behalf of my Hypothesis, yet I have said so much, that I believe I may boldly say, it is the best and clearest Hypothesis now extant, on which the cure of Diseases may be attempted on greater certainty, than on any other Publick.

Al. At one time you say, all the Physicians in *Christendom* of any business have used *Acids*, now but some few; we must conclude either you contradict your self, or else the Men of business, in all *Christendom* have been but few: But if by Men of business you mean such as your self, then I believe indeed they have been but few, and the assistance you have had from them, towards the establishing your Principles, has not been great I grant; for your reading has been little. Yet some assistance I am confident, you have had; for your Discourses smell pretty strong of Dr. *Andre*, of *Acid*, and *Alkali* Published in English, 1689. But when you say, you have taken as much true pains to inform your self in all parts of Physick as any ever did, you cannot be excused of Arrogancy; for we well know, you neither have had the Years, Abilities nor Opportunity many have had. Besides you are so extraordinarily accomplish'd in that one Qualification of a Doctor of Physick fashionable Language, that it must needs have taken up much of your time to acquire it, and hinder your learning other parts of Science. But as for your spending as much Money, as most who have been bred at Universities, we know very well you never had it to spend. But why could not University-Men have Ocular demonstration for their Money as well as you? Or, How come they to be confin'd to the fusty Notions of *Aristotle*? for want of other Books? I hope you will supply them with fresh Notions for the future. But you have not said all that should have been said in behalf

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behalf of your Hypothesis, that is if it were to be made probable. Here you are in the right, and I should have perceiv'd it, if you had not told me so. And I grant you believe, or would have us think your Hypothesis is the best, and clearest in Physick now extant to all intents and purposes, and you have said as much as this comes to over and over. 'Twas a thousand pities you were not able rightly to handle it, that it might have proved the most glorious of its kind that ever appear'd on the Stage of the World. But after all these drabbs, and stir for a Name to Posterity (not to talk of getting a little Money to purchase an old Coach for the present) your Treacherous Memory so far fail'd you, as to let you say, you did not pretend to be sole Author, or first breacher of the Doctrine of Acids, it having long since been the opinion of some of the most happy Practitioners in the World, and is now embraced by some of the greatest Men, and most happy Practitioners our Age affords, and that you don't pretend to be so great a Man, nor deserve so well of Mankind as Helmont, Paracelsus, &c. who treading out of the common Path, did not want maligners; therefore, why should you who don't pretend to have arriv'd at those great Perfections they had, take it amiss to be abus'd, and evil spoken of? Here you are over modest and meal-mouthed. For these Men were Foreigners, and often used Alkalies, and were ignorant of your Doctrine, that Acids are the cure of all Diseases and yet deserved better of Mankind than you. What fit of Modesty is this, now? 'Tis to be fear'd your cause will suffer for this. But I see in all this you would commend your self by comparing your self to such great Men; but you have not done it ingenuously yet you should let others praise you, and not your own Mouth.

Ac. I have had several congratulatory Letters from divers Learned Men in praise of my Discovery of the Doctrine of Acids, as for instance from Dr. Jones, beginning thus, Dear Sir, As for Acids, Dr. Barnard and your self deserve eternal praise, &c. From N. Tyling, Dignissime, contra Jussuram, nunquam normam peccarem si virum qui Deo proximo vitam debeam silentio preterirem. Super, enim cum e luce pene evasissim tu mihi propitius adstastisti, candide effulsisti, Tu mihi Apollo, &c. And from Dr. Watson thus, Tractatus tuus luminis cum deliciis & voluptate perlegi, & tuum in promovendo illo nobilissimo Medicina studio institutum, maxime demum in humani generis bonum, universale. Maeste Bone vir Melioribus Anibus, & minus aeternare, &c. And in the beginning of my Relation of the Person bitten by a Viper, you will find the following Panegyrick. To the Unknown Dr. Colbatch, upon his most Ingenious Tracts, especially that of Alkalies and Acids.

Physick

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Phyſick for Ages paſt has grov'd her way
In Paths of Darkneſs, without any Ray
Of certain Truth, and ſtill was going aſtray:
When COLBATCH roſe, who with reſtoring Light
Diſpell'd the Clouds, and chas'd away the Night,
By him th'important Secret is reveal'd
Through Fraud, and Ignorance ſo long conceal'd:
No ſordid hopes of Gain, ever ſway'd his mind,
His only Aim's the good of Humane Kind;
Who fiſt with Pains, and Labour dug the Ore
Then freely gave us all the Golden ſtore.
Let Juggling Quacks grow envious of thy Name
Combine together to obſcure thy Fame
Such are the Myſteries which thou doſt unfold
They'll write thy Name in Characters of Gold,
To thee alone Mankind's indebted more
Than to all the Doctors that have gone before.

J. C. Junior.

Al. Theſe Men praiſe you at a great rate Mr. Acid, one thinks eternal Praiſes your due, another owes his Life to you his Pagan Deity, another is raviſh'd almoſt in reading your luſtreous Writings, and admires your Capacity in promoting Medicine, claps you on the Back, and bids you deſpiſe your Carpers; But the fourth outdoes them all, and ſings you too. I wonder no body did it ſooner, for you are a Subject enough to inſpire the dulleſt Muſe: But the Poet might have let us have had his name at length, ſure he needed not to have been ſhie of owning his Opinion of you any more than the other Gentlemen; Beſides he might perhaps have prevented our miſtaking him: For I cannot be perſwaded but that it was John Colbatch Junior, that was the Poet, however I am ſure that John Colbatch Junior, cauſed it to be printed in his Book, and had he not been a Junior it had never been there. To the Unknown Dr. Colbatch is a very odd Epithet on ſo Famous an Author, it cannot ſure be an Ironie, but hold; John Colbatch Jun. may be very well thought to be unknown to himſelf, otherwiſe he could never have Published his own Praiſes at ſo extravagant a rate. As for his Poetry I ſay, in ſhort it is Poetry, and it is well it is ſo, for nothing but Poetica licentia can excuſe it, it being all fiction: And perhaps for this reaſon Tom Saffold choſe to Publish his Bills in Verſe, knowing the liberty of the Muſes to lie. And now I mention the Famous Tom Saffold, it brings into my mind what a Friend of Mr. Acids, who ſaw what J. C. Junior had written would have added, which was this:

Whilst

*Whilst Saffold liv'd (could you believe him) he
 Outdid all other Quacks in Pharmacy.
 'Twere Saffold's Pills so call'd among the rest,
 Deserv'dly had gain'd the name of best.
 Since J. C. Junior rose his greater fame
 Defac'd the Monument of Saffold's Name:
 Believe him, or his Friend, he merits more
 Than all the Saffolds that have gon before.
 His rarest Tincture, and his great Wound-Powder,
 Do praise him every day lowder and lowder.
 In Villers-street near to the Als his head,
 John Acid Liveth, now Tom Saffold's dead.
 Acid like Saffold mighty Tales has told,
 And here his famous Drops are to be sold.*

But to deal plainly with you Mr. Acid, this is but playing the Quack, and least you should take it unkindly if I should handle him only in rough Prose, who now comes dress'd out so finely in Verse. I'll give the Quack his Character in the same fashion. As follows,

*A Quack's a Medicafter, setting forth
 By base, unhandsome means his feigned worth,
 Whether on Saddle, moving Stage he sit,
 Boasting his Remedies, from street to street.
 Whether he keep a Fool to act his part,
 To draw a concourse there to Preach his Art.
 Whether at Coffee-House he does appear
 At such an Hour, plying for business there:
 Whether his Story he described has
 O'th paper Hangings of a pissing-place.
 Or tho' his Tales unto a Volume rise,
 To speak him Learned in the Peoples Eyes
 The Quack's the same in differing disguise.*

But I long to see whether John Acid deserves all his great Encouragements, and whether his new dug Oar will yield him any Metal that will stand the Test, I doubt it will not go through the fiery Tryal.

Ac. As for the great threats daily thundred out of my being confuted, they are but Scare-crows to me, I am far from being afraid of it, and whoever shall make it appear by solid Experiments,

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periments, that I am in the wrong, shall be my Great Apollo, and the first thing I do, shall be to write a Publick Recantation.

Al. Upon your word Mr. Acid you'll vomit up your so well digested Hypothesis; if I can help you to an Emetick, that will work upon you: I believe you would never offer so fairly, but that you are confident that nothing will turn your stomach: I'll try. I fancy *Antimony* may yield a Medicine strong enough for you; you say, 'Tis an Acid, therefore I hope you will be willing to take it, if that won't do, we will try your own Vulnerary Powder, that's vomitive too, and we will prepare them with Acids. I'll give you a process I'll warrant you, and you shall prepare it, in your own Elaboratory, You are a profess'd Chymist you know, and a Disciple of Helmont, and know nothing so delightful as Chymical Operations. Helmont purg'd himself of the Galenical Hypothesis, by what he wrought out of the Fire, and if you follow my directions it may be you may clear your self of yours, and you know you are Apothecary enough Master Doctor, to dispence your own Medicines skilfully, when you have prepar'd them.

Ac. I confess I was bred nn Apothecary, and under a Man that was not the greatest Master in his Business; but taking notice of my Master's imperfections, I apply'd my self, for Four Years of his time, to those things my Master could not Teach me in some measure; and when I was become a Master in Pharmacy the foundation on which Physick is built; I was induc'd to look into the Body of Physick it self; and tho' I dont pretend to absolute Masterhip, yet I shall endeavour to improve my Talent. The greatest part of my time I liv'd in Worcester, and tho' I kept an Apothecaries Shop, my dependance was wholly upon my Practice. And since I speake of my being an Apothecary. I shall give the necessary Qualifications of one of that Profession; that you may judg such a one has made a large step towards being a good Physician. 1. An Apothecary must have good acquaintance with the Vegetable Kingdom, not only to know the Faces of Plants; but their Natures and manners of Operation on Humane Bodies. 2. He must well understand the Nature and Operation of Minerals and Metals, which is not to be attain'd without much Reading and hard labour in the fire, and 3. of Animal Bodies, amongst which is Man, there being scarce a part of his whole Body, but what is sometime or other to be used as a Medicine; but first requires the Apothecaries Skill for its Preparation. The famous Etmüller was not asham'd to own that he serv'd Eight Years to an Apothecary; yet he became one of the most Eminent Physicians in Europe: And for ought I know, the loss of him at that Age he

Ly'd,

Dyd, deserves as much to be lamented as the loss of any one private Man, from him so much might have been expected.

Al. One might have guess'd you to be an Apothecary, if you had never told us so, you talk so like an Apothecary: But I am sorry you had no better a Master; it had been well you had met with one that could have taught you a little good Manners; for truly John, you shew none in publishing your Master's imperfections. But pray you, who taught you for that Four Years you went so far beyond your Master's Capacity, as to become a Master your self in *Pharmacy*? Truly I can hardly believe you are a Master in *Pharmacy* yet. For tho' you call your self a Doctor, I am sure you talk as if you knew not what *Pharmacy* means, when you tell us it is the foundation on which *Physick* is built. You have look'd into the Body of *Physick* at a fine rate: But indeed, you don't talk like an absolute Master, to tell us, That *Pharmacy*, that is the making of Medicines, is the foundation on which *Physick*, that is Natural Knowledge, is built. Surely John, you never read any Institutions, or if you did, what you read slip'd out of your treacherous Memory; but it may be, you would speak with the Vulgar, while you think with the Learned, and then the sense of it is, That the making of Medicines, is that upon which *Medicine* is built. But if you would talk with the Doctors, they place *Physick* or *Physiology* in the first place, as the foundation, meaning the consideration of Nature it self in its sound state, or due order. Then *Pathology*, the account of its Defects. And thirdly, *Semeiotica*, the consideration of the events or issues of those Defects. Then *Hygiene* which teaches to preserve from those Defects, as much as may be. And in the Last place, comes *Therapeutice*, the method of reducing the Defects of Nature, and the fitting the Instruments for that purpose is *Pharmacy*: So that it is far from the foundation of the Building. What Practice you built on your foundation of *Pharmacy*, I know not, or whether your dependance were on that Practice. You are very kind in giving us the necessary Qualifications of an Apothecary, you are willing to inform the World, how fit a Man Mr. Apothecary would be thought to be to make a Doctor of. But by your Mastership you shew in *Pharmacy*, and your acquaintance with *Materia Medica*, I believe before we have done, it will appear, you have not made that large stride an expert Apothecary has took towards being a good Physician: But I shall remark here only, what acquaintance you have with Animals; especially such an one as your self, of which you say, There is scarce a part but is sometime or other to be used as a Medicine. I believe your Brains would make an excellent one, but they would hardly yield one Grain of sharpness in Distillation. And as I suppose, you would not use

Man's

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Man's flesh crude (except in some few Distempers of Women) because you say it ought to be prepar'd : If the Fire must be used, it will produce *Alkalies* copiously from both fluids and solid parts of Man's Body ; and *Alkalies* according to your Hypothesis are the principle of Death and corruption ; and yet all parts of Man's Body are sometimes to be prepar'd for a Medicine. You forget your self so oft *John*, I am aham'd of you. The famous *Etmuller* was a Foreigner and an assertor of *Alkalies* to be good Medicines, and *Acids* the cause of many Diseases : How comes he in so much Credit with you here Sir ? He should be rather infamous methinks for his *Fraud* or *Ignorance* ; but you forgive him I see for sake, sake ; that is, he was an Apothecary, and yeilds you an Argument for us, thus, *Etmuller* was an Apothecary ; and yet became one of the most Famous Physicians in Europe ! one whose loss is much to be lamented, he might have been so useful : *Ergo*, Mr. *Acid* who was an Apothecary, may nevertheless be one of the most Famous Physicians in Europe ; and so, much to be priz'd : This is the Logic of it. But truly I can see no such great hopes of him, he is so apt to forget what ever he says and do's ; but a blind man may catch a Hare, they say.

Ac. I wrote my Essay of *Alkalies* and *Acids*, during the Siege of *Namur*, when I had not the opportunity of consulting Books, nor the benefit of coming at my own Papers, wherein I had set down my Observations ; wherefore, I only made use of those occur'd to my Memory, which is a very treacherous one, so they are not so numerous and exact as I design'd them, but yet I was willing to venture them abroad as they were, for some reasons ; they being not in the least design'd to entertain the Learned, but to undeceive the Multitude. I have aim'd at certainty, if I can once arrive to that (which I will never rest till I have done) I care not. If we could have a publick Laboratory at the Nation's Expence I should hope to see the matter sooner effected. It costs the Nation some Hundred thousand's a Year in Powder and Ball to destroy Mankind : Why not One Thousand in Experiments to save their Lives ? There is a Noble Laboratory already Built at the College the fittest place for such a thing, and the Governing Officers are Men of Fidelity, and of such Publick Spirits, that they are fit to be trusted with a greater Summ.

Al. I think it had been well, Mr. *Acid* you had let alone Writing till you could have consulted Books, as well as your own Papers, that you might have help'd your Memory (which you now confess to be a very treacherous one, and so shew, I have not abus'd you) for truly your Observations are not so exact as they should be. But you had Reasons to venture them abroad, not to entertain the Learned ;

Learned; but to undeceive the Multitude. What's the meaning of this Sir, who are the Learned? The *Assyd* Doctors such as your self, Dr. Jones, Dr. Watson, Dr. Baynard? &c. And are all the rest the Multitude? Those perhaps whom you call *Young Physicians*, tho' for Years they may be Old Men. Or, do you mean by the Learned, all Physicians, and by the Multitude all other Men who understand nothing of Physick. These last you rather seem to mean: But what do you Write to teach them Physick? What will become of the Doctors then? There is Vinegar, Crab-Verjuice, Lemons and Oranges enough to be had and you tell them, *They can never over Dose it, for the Stomach wont fail to reject whatever is to much, and the damage is but a puke or two*: We shall have them all turn Doctors, your method is so easie. But by undeceiving them, I rather suppose, you mean you would convince them that the *Alkali-Doctors* are dangerous fellows, or at best good for nothing; that they may Employ you Mr. Acid, and your Disciples, if you have any: There's the knack of it; and I confess, there needs not much exactness in putting out Bills to invite those that know nothing of Nature, or good Sense; and this consideration makes me inclinable to fancy, you may be as sharp a Fellow in Politicks as *Tom. Saffold*, who once shew'd himself more Knave than Fool, when being told, his Bills were Non-sense, He wittily reply'd, he Liv'd not by Men of Sense. And I confess Fools are soonest caught. I applaud you for aiming at Certainty; but if you mean Certainty in Physick, and will never rest till you arrive to it; I think, I may promise the World a perpetual motion on your Credit. A Publick Laboratory at the Nation's Expence, would be a brave thing (but that would never make you an infallible Doctor, tho' you were the Director of it) and a Thousand a Year; yea, Ten Thousand would be better spent in such a Design to save Mens Lives, than some Hundreds of Thousands to destroy Mankind. But methinks Mr. Acid, you give the Nation a hard Complement, and especially His Majesty the Supreme Director of our Expences, to say so much Money is spent to destroy Mankind. I don't believe, any such wicked Design; but that you abuse both King and People. But we have a Noble Laboratory to our wish at the College, the fittest place for such a thing. But *John*, you do not only bespatter every body else, but you disgrace the College too, by begging Money to buy them Coals and Glass, as if they were either not able to defray the Charges of the design themselves, or so covetous they would not, unless the People give Money to instruct them in their Art, as well as pay their Fees for the effects of it. What the Governing Officers are as to trust, and Publick Spirit, I shall leave to those that best know them. But indeed

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indeed *John* I have no hope that those Men who understand Philosophy enough already, will ever be eager in the design you talk of, either with their own, or others Money; and submit it to your teachings: I could never find them so solicitous about Instructing young Physicians as your self Sir; but if they were, I should still fear a publick Laboratory, as you would direct it, would rather be a publick Pest, than a publick Benefit; there would be so much Oyl of *Vitriol*, of *Sulphur*, and other sharp Corrosives made, and given to the Sick, as would destroy ten to one more than Powder and Ball do's: When not one in ten but sometimes may want a Doctor; but not one in ten thousand go's to the Wars: And these things would be so much more dangerous; because (like White-Powder) they would do execution, without giving a report. For *John* I must tell you, I still believe, that *Acids* may be the Cause of many Diseases; especially in the Hand of a sour Hypothetick: And *Alkalies* may in many cases be very good Medicines: And this will go near to be my Opinion, till you have convinc'd me by good Reasons, grounded on sufficient Experiments, that your new Hypothesis is any more, than a new Method of Quacking.

Ac. Every Man may be capable of judging, whether my Hypothesis is true or false, from this easie Method. Every Apothecary's Boy knows that all *Acids* pour'd on Syrup of *Violets*, or a solution of it, will turn it Red, and as the *Acid* is stronger, or weaker, so will the Red colour be: So on the other hand, all manifest *Alkalies*, lixivious or Volatile will turn the Syrup Green, and as the *Alkali* is stronger, or weaker, so will the Green Colour be. Whence I infer if the *Serum* of Blood did turn the Syrup Red, it would be plain, that the *Serum* did abound with *Acids*; but if on the other hand it turns the Syrup Green it is more, or less impregnated with *Alkalous* Particles. I positively assert, I could never find the *Serum* turn the Syrup into any colour but Green. All manifest *Alkalies* thus change the Syrup to a Green. Ergo, If the *Serum* too do's so change it, it must needs abound with *Alkalous* Particles. This is an easie way of Arguing, and the plainest Demonstration in the World. And no one that labours under the *Gout*, or any other Distemper Chronical, or Acute; but will be glad to lose two or three Ounces of Blood, to make this Experiment, on which so much depends. Every Gentleman, may thus reason with himself: My Physician tells me, my Blood abounds with *Acids*, and upon that score, gives me *Alkalies* to correct them; but if he should be mistaken, and my Blood abound with *Alkalies*, his giving me *Alkalies* will encrease the Distemper: Therefore since I have so fair an opportunity, my own
C Eyes

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Eyes shall be judg, what my Blood abounds with : Whether Dr. Colbatch's Enemies, being almost all the World of Physicians, or he are to be blam'd. If my Blood abound with *Acids*, he ought to be Kick'd out of the Common-Wealth ; if on the other hand, it abounds with *Alkalies* ; he deserves all the Encouragement in the World ; for discovering so useful and necessary a Truth, and thereby exposing himself to the malice and rage of so many. This Experiment is liable to no Objection, I know of ; and by it I can refer my self to every Gentleman, and from Gentlemen, I shall have Justice. Physicians have endeavour'd to expose me, because owning me to in the be right ; would be owning their own mistakes : But by this Experiment, I have appeal'd to more just Judges.

Al. You begin to talk like a Philosopher, and a Logician too ; now Mr. *Acid*, I hope, that I shall have some Work, and that we shall leave Playing : And I am very glad, I am capable of judging of your Hypothesis, by your own concession, since you say, every Man is so : And I hope, some Men will be capable of judging of what I shall say to it ; tho' perhaps, every Apothecary's Boy may not : For in some places they do not teach them for the first thing, the change of colours in Syrup of *Violets*, by *Acids* and *Alkalies*. But I shall appeal to Physicians, and Gentlemen too, if Men of Sense. Gentlemen you know, are many of them, troubled with the *Gout* ; and I remember you have told us, *That all that are afflicted with the Gout, are Men of Sense ; for you never met with one Block-head that was troubled with it.* This is good Logick, could we suppose, you had met with all the Men troubled with the *Gout*. But I shall love *Alkalies* the better for this trick : For if all that are troubled with the *Gout*, are Men of Sense, and all that are troubled with the *Gout* abound with *Alkalies* (as you have affirm'd) it looks something like an Argument that Men abounding with *Alkalies*, are Men of Sense ; and then on the contrary, Men abounding with *Acids*, are likely to be Block-heads ; and I should always be afraid of an *Acid* Doctor, not only least he should be an Ass himself, but least he should make me a Fool too, by destroying the *Alkali* in my Blood, which gives me more happiness in a sensible Understanding, than infelicity in the sence of a Gouty Paroxysme. But tho' I appeal to Gentlemen, as well as Physicians ; I shall not like, you so far disgrace my Profession, as to suppose, Gentlemen better Judges in Physical matters, than Physicians themselves : Should I do so, I should shew my self no wiser, than the Barrester who would be judg'd by his Clients, whether he pleaded Law, or no. I will not accuse Physicians, as either less Wise, or less Just, than Gentlemen ; however Mr. *Acid*, or other Gentlemen may take it : But assert their Education for the generality, in all respect

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respects equal to, if not exceeding Gentlemen; and if their accomplishments in Physical Knowledge be not greater, it is a great shame, and Gentlemen are unwise in using them. But let us come to the reason of your Hypothesis. All *Alkalies* turn Syrup of *Violets Green*; Tarbox the Blood abounds with *Alkalous* particles. This is an easie way of argueing; but truly your Argument is far from a Demonstration; you are out in your Logick here, and have not prov'd the Point. For unless you could have made a regular Category, and have said, Whatever turns Syrup of *Violets Green*, is an *Alkali*. But Serum of Blood turns Syrup of *Violets Green*; therefore it is an *Alkali*, or abounds with *Alkali*: and then have prov'd your Major: It will not follow, that the Serum abounds with *Alkali*: For tho' all *Alkalies* will turn Syrup of *Violets Green*; yet it wants to be prov'd that whatsoever turns it Green, is an *Alkali*, or that nothing but *Alkali* will do so: Which I am sure, you will never be able to do, but by denying some of your assertions; as may appear before we have done. But I grant, that the Blood abounds with *Alkalous* particles; if by abounding, you mean only that it yields, or contains a great deal of *Alkali*, and not that it has always too much. And what then Mr. *Acid*? You don't deserve all the Encouragement in the World for this necessary Discovery; because truly, it is none of your Discovery; being well known, long before you were born, to your Master *Helmont*, and a great many more Famous Men; yea, I dare say, all that at present deserve the Name of Physicians, knew it before you ever saw Blood Distill'd, or knew it would yield a Salt, or that Serum would turn Syrup of *Violets Green*. But you have discover'd one thing indeed, in asserting this your Discovery, that is your self, unacquainted with the World of Physicians, or arrogant and foolish in publishing that, as your Invention, which was generally known, long before you knew any thing of Physick. And truly *John*, you deserve to be laugh'd at and hiss'd, if not kick'd out of the Company of Physicians, for this Discovery. But to the Argument, 'Tis true, the Blood abounds with *Alkali*, whoever discover'd the truth of it. What then, do's it follow, that the Blood's abounding with *Alkalies*, is the Cause of all Diseases? Not at all. For, if it abound with *Alkalies*, I say, it should do so, as it naturally does in Persons most healthy; and it no way follows, that the abundance of that which ought to abound; is the Cause of Diseases: But the want of the due quantity of that which ought to abound; or the abounding of that which should not, or do's not naturally abound, is much more likely to be the Cause of a Disease. It is well known to these Physicians who have (as they ought) been

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exercis'd in Experimental Philosophy, that Man's Body by a Pyro-technic Examination yields a great quantity of Volatile, Alkalous Salt; but the quantity of it is much exceeded by the other Products; yea, even by one of them, *viz.* Water, the abundance of which, a Hypothetical Brain, might as well have fancy'd the cause, not only of a *Dropsy*; but of all other Diseases; there being more of it to be carry'd off by Perspiration, than of any other Matter. It is beyond all doubt, that the Particles constituting the Humane Frame, are of different Figures and Sizes, and have their determinate Proportions, as to quantity; from whence arise the different appearances of the Parts in their Natural Shapes and Constitutions; as also the different qualities of the Artificial Products from one, and another of them. But for a Man to say, That the abounding of any one of these (tho' by abounding, he mean one of them is too much in quantity) is the Cause of all Diseases; looks so unlike a Philosopher, or even a Rational Man, that I admire any one fond of a Reputation, should be guilty of such a folly, as either to assert it, or believe it! It is evident to all Men, that in any sort, study the Nature of Bodies, that a due Proportion of the component Parts is requisite to the proper Constitution of a Compound Body. And if a Body consisted but of two sorts of Particles: For instance, *Acid* and *Alkalous* (supposing them themselves to be simple Bodies) in all Reason, as there ought to be a certain Proportion; the abounding of one, as well as of the other, would make an undue Constitution, or Disease. But the Body of Man, consists not wholly of *Acid* and *Alkalous* Particles; so that one of these two must needs abound, to make a Disproportion; but of divers others, either Natural Constituents, or Artificial Products: And that it should be said, that but one of these can possibly abound, is without any colour of Reason; when not only our Food, which encreases and maintains the bulk of our Bodies, is so different, abounding now with one, then with another sort of Particles Homogeneous to those our Bodies consist of; but also the various Excrements to be Egested, may be now one, then another retain'd, or too hastily carry'd off, and so cause a disproportion; and what the proportion ought to be between these divers Particles, I doubt, will be found a matter too hard for a better Philosopher than Mr. *Acid*, certainly to determine. Moreover, the Body of Man is to be consider'd as consisting of solid and fluid Parts, containing and contained; besides which, there is in Man τὸ *Εὐγεννιον* *Impetum faciens*, and as we consider Diseases, with relation to this threefold Division; the fancy of *Alkalies* abounding to be the cause of all Diseases, will still appear more groundless, too narrow and

insuffi-

insufficient. In the solid Parts, there is to be consider'd, their undue Conformation; too little, or too great, too narrow, or too wide in proportion to one another; and so their unequal strength, their being too hard or too soft, solid or pœreous; with many unperceiv'd Solutions of Continuity, &c. from which, divers Diseases, on divers occasions, may proceed; and all which, undue Conformations, unequal strengths or breaches, cannot be suppos'd so different and contrary, to proceed from the single abounding of *Alkalies* in the Blood. For instance, a large disproportionate Liver, small Lungs, narrow Veins, Cartilaginous *Aorta*, single Kidney, inward imperceptible Breaches, are impossible to be accounted for, from the abounding of *Alkali*. 2. The Liquors or Contents of the Body may be too thick, or too thin; moved too fast, or retarded too much, Extravasated, or Coagulated in some Vessel or other; of which contrary Effects, the abounding of *Alkalies* onely, cannot be always either the occasional or formal Cause. 3. As to the Τὸ Ἐνοϋλλον of *Hippocrates*, or *Archem* of *Helmont*; because some more thinking Heads, than Mr. *Acid*'s four one, have thought it too abstruse or subtil a Notion: I shall first tell you plainly, what I mean by it, leaving others to determine, whether *Hippocrates* and *Helmont* meant the same. By the Τὸ Ἐνοϋλλον I mean the Soul, or Mind of Man in its extravagant Appetites: And that nothing else ought to be understood, by that of Man which is consider'd as an Agent; but his Mind is apparent from This, (which all considerate Metaphysicians must acknowledge as a Truth) That there is no Being we have any Idea of, but Mind and Body; the one being Active, the other Passive: And tho' all created Minds may suffer, as well as do; yet all Body is universally un-active, and can do nothing. Tho' this Notion may seem a Paradox to some, I shall say no more of it here, than what relates to my present purpose; because I may have occasion to speak farther of it, if I live to finish a Discourse I have for some time spent some thoughts upon, *Of the Root of Diseases, and their Cure in Humane Nature*. But to return to the business in Hand, It is apparent, that the exorbitant Desire or violent action of the Will of Man, is that which often produces such an alteration in his Body, as when perceiv'd becomes a Disease. For instance, the Blood is too much retarded, or accelerated in its course, as well as the more subtile Liquors variously disordered; from whence proceed divers ill Effects, which cannot be thought to proceed from the Production of too much *Alkali*, or retarding its supposed necessary Evacuation in a Moment. The unsatisfy'd desire in its most sudden Disappointments, cannot be thought to be

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so great a Chymist, as to produce in an instant a greater quantity of *Alkali* Salt than the Body can bear, or so soon separate the *Acid* that should temper it; but is rather to be thought, to produce its Effects in a more subtil way. The force of Imagination and Desire upon the Body, is very well known, tho' the way of working those various Effects is little understood: But I shall consider it no farther here, than in relation to *Alkali*, which is with no colour of Reason to be thought either the Cause of those Mental Disorders, or the instrument of the Effects produc'd thereby. But to come a little closer to the Term of abounding either of *Alkali* or *Acid*, in the liquid or solid Parts: When may either be said to abound, so as to be likely to be the Cause of a Disease? I answer, When there is too much of the one or the other. And how shall we know that? May Gentlemen say (for we will appeal to Gentlemen; yea, and Ladies too, if they will Read us: Poor Men and Physicians we shall get but little by; tho' they should think us Skilful Doctors.) I must tell you, Sirs and Madams, there ought to be some Consideration of the due Proportion, before we talk of abounding; and it is certain, That there is abundantly more *Alkali* in, or produc'd from the Blood and other Parts of Man's Body than *Acid*, and ought to be so in a sound Man, as we have seen Demonstrated by abundance of Experiments. The proportion of *Alkali* to *Acid*, we need not scruple to suppose, no less than as twenty to one, when we have found the *Alkali* to the *Salsum* as seventeen to one: But we will not pretend to ascertain the Proportions; it being a very difficult matter to find them, But we will suppose, twenty to one, or but ten to one if you please, to shew you that your Doctor *John* has talk'd like an Ass-ey'd Doctor to you. For if there ought to be but one part of *Acid* to ten of *Alkali*, and there be just that proportion; neither can be said to abound, or thought to cause a Disease: But if there be two, or more parts of *Acid* to ten of *Alkali*, the *Acid* must be said to abound, or be too much, not the *Alkali*. And as for the little Trick *John* has shew'd you with Syrup of *Violets*, at the expence of two or three Ounces of your Blood (which in some Cases ought not to be spar'd.) I think, I should undervalue your Parts, if I should suppose, you can't see thro' the Juggle and make an Objection, where your Doctor says, he can see none. For tho' *Acid* greatly abound, or be a deal too much; yet the *Serum* will not turn Syrup of *Violets* Red, unless there were more *Acid* than *Alkali*. And such a quantity of *Acid* (if it were possible, in a Living Humane Body) would be a Disorder too great, for either an *Acid* or an *Alkali*-Doctor ever to reduce

reduce. And that you may satisfy your own Eyes, and judge whether Doctor *Acid*, or all the Physicians in the World, ought to be Kick'd out of the Common-wealth; without the trouble, and sometimes hazard of losing two, or three Ounces of your Blood. Take Syrup of *Violets*, and drop into it a quantity of an Alkalous Spirit: and you will find it presently turn Green, and then take an *Acid*, and drop but a little in, and you shall not find it turn Red; but drop in till you have over-power'd the *Alkali*, it will turn Red; then drop in again of the *Alkali*, and as soon as you have over-power'd the *Acid*, it will turn Green again. By this Experiment you may be rationally perswaded, there may be too much *Acid* in the Blood, and so enough to cause a Disease; tho' the Blood does not contain more *Acid* than *Alkali*; and so turn the Syrup Red. And that there may not be too much *Alkali*, tho' there is enough to turn the Syrup Green.

Ac. The Physicians of our own Age, more particularly of our Nation, and among them (most especially of our College) have made greater Discoveries in the Anatomy of the solid Parts, than ever were made before; but as for the fluids, wherein the Cause and Seat of Diseases lurk, they have in a great measure been neglected: But the College abounds with Men of such large Capacities, that if once they set about the Work, I doubt not, but they will perfect it. Being Skill'd in the Anatomy of the solid Parts. A Noble Qualification! Enables a Man to talk finely; but do's not in the least enable him to Cure Diseases. For it's an exact skill in the Anatomy of the Juices, that makes a Man a good Physician. And I have made it the business of my Life, to understand rightly the the Juices of Humane Bodies in their Natural and Morbid States; and by that means have been capable of doing more than other People; and I tell you, that the Blood has never any *Acid* in it; but when People are in a perfect state of Health: Nay, I tell you, the Blood can't over-abound with *Acids*, neither in a Morbid nor Healthy State: For tho' manifest *Acids*, are things the Stomach much more covets and delights in, than any thing besides: When she is loaded with more than the Body has occasion for, she won't fail of rejecting them by Vomit; which may be experienc'd by an over large Draught of Vinegar; but altho' it can't over-doe; yet it is very defective in conveying a sufficient quantity into it, thro' its own fault, or the Physicians. But the Blood of Diseased Persons has more *Alkali*, than that of the Healthy; as in Fits of the *Gout*, it abounds with *Alkalous* Particles, more than in Health as six to four, or five and a half, or as five to four; which you will find in my Book of Blood, where my Experiments are as clear Demonstrations of my Hypothesis, as what is given by the great

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est Mathematicians. So in the Small-Pox and in Scorbutick Persons it does appear by many Tryals, that the Blood of such Persons does more abound with Alkalous Particles, than that of sound People, and a Sick Person's *Serum* will turn Syrup of *Violets Green* sooner than a well Person's. And if Physicians would Critically Analyze the Blood in all Distempers, I believe, thereby the Cause of all Diseases would be certainly known.

Al. Mr. *Acid*, you are very lavish of your praises where you place your favour; I wonder the College who have so great a share of them, are not suseited. They have made more Discoveries in the Anatomy of the solid Parts, you say, than ever was made before. What Discoveries have they made I pray you? Wherein have they out-done others, either of the foregoing Age, or Foreigners of this? What improvements have they made in the Anatomy of the solid Parts? You know perhaps, but you won't tell us: and 'tis no matter, whether it be any thing or nothing. For being skil'd in the Anatomy of the solid Parts is a *Noble Qualification* you say: But how do's it Ennoble a Man? Why, onely enables him to talk finely; but do's not in the least enable him to Cure Diseases. It is an exact Skill in the Anatomy of the Juices, that makes a Man a good Physician; which Anatomy has been neglected even by our College. What is the inference of this? Why, our College have a Noble Qualification of Talking finely; but not in the least an ability to Cure Diseases. Pray you Sir, what are the People the better for the Colleges Ability to Talk finely; if they have none to Cure Diseases. No, but they are Men of large Capacities! Capable of perfecting the Anatomy of the Juices too, if they would but once set about the Work. But when that will be, who knows? They understand Philosophy enough already (tho' their Friend *John* says no) and while they are in that Opinion, they will hardly learn more. While they think the Anatomy of the solid Parts is enough for them; they will never set about the Anatomy of the Fluids by Mr. *Acid's* Direction: And so for ought we know, they are like to remain Physicians *in Verbo* only; Fine Talkers. But Mr. *Acid* is the only Physician *in Re*, indeed, amongst them. 'Twas great Prudence in them to take you into the College Sir, that they might have one real Physician to actuate the rest; that they might not be a Body without a Soul: You know *Acid* is the Soul of the World. And an As-Ey'd Doctor may as well be the Soul of the College. I can hardly think, they would so readily have given you a Licence; but that they expected you would do something for them, they could not do for themselves; run down the *Badger*, catch the *Salmon*, or some other piece of Difficulty.

you

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You, who have made it the Business of your Life, to understand rightly the Juices of Humane Bodies in their Natural and Morbid States; by that means have been capable of doing more than other People (if you say true) more than all the rest of the College. But you are a Particle of the College, and what you do; is the doing of the College. 'Tis well they have you, that they may not only be said to do something; but more than other People; tho' not in the whole; yet in one part of them, *viz.* Mr. Acid. But truly *John*, your crying down the Skill in the Anatomy of the solid Parts, is but a dull way of excusing your Ignorance therein, and you do but as Block-heads commonly do, cry down as useless, all Knowledge they themselves have not; that Fools may think them Wise enough. But I must tell you *John*, and the Gentlemen too, That the Skill in the Anatomy of the Solids, is so far necessary, that the Anatomy of the Juices signifies little to a Physician without it. The Animal Oeconomy can never be well understood in its due Order and Defects, by one that knows nothing of the Structure of the Parts. For instance, tho' I knew the Gall to be of such, and such, a Nature and Quality, and by a Pyrotechnical Analysis, to yield such, and such different Bodies, or Sets of Particles: What am I the wiser, as a Physician, unless I know where this, thus qualify'd Liquor, is separated and discharg'd? How otherwise, can I determine of the Use, or Defects of this Liquor? So likewise as to the other Liquors of the Body: How can I know their Motions, Secretions and Uses, unless I know which way they pass, and where separated? Was the Famous *Harvey*, or *Servetus* before him, nothing the better for being aware of the ways of the circular Motion of the Blood, but only that they could Talk finely. Fye *John*, you don't talk like a Light in Physick, much less in Chirurgery. I must tell you, if you had been skill'd in the Anatomy of the solid Parts; you would not only have talk'd more finely; but more truly than you do, as we shall see in a Material instance before we have done. And as you have foolishly confess'd your Ignorance in the Anatomy of the solid Parts (a shame to any Physician, especially to one that Writes himself of the Noble College) so I believe, I shall find you ignorant of the Anatomy of the Fluids too; and that it will appear, you have not done more than other People in any thing, but Impudent Boasting! You tell me, that the Blood has never any *Acid* in it, but when People are in a perfect state of Health; and that it can't super-abound, neither in a Morbid, nor Healthy state: For tho' the Stomach covets *Acids* more than any thing else, she will not fail to reject what's more than enough, by Vomit; but tho' she can't over-doe, yet she's very defective through

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through her own, or the Physician's fault. You are a cunning Man! Of a fine Stomach. You once told us, *That all Persons have some degree of Sickneſs.* Now that the Blood has never any Acid in it, but in a perfect ſtate of Health. But I anſwer, If all Perſons have ſome degree of Sickneſs; then none are in perfect Health; and if none are in perfect Health, according to you, none have any Acid in their Blood. Yet again you tell us, *That Leanneſs is for want of enough Acid in the Blood, and Fat is nothing but a concrete of Acid and oily Parts; and over-much Fatneſs, if it may be call'd a Diſeaſe, is caus'd by Acids.* What a miſery it is for a Man to have a *Treacherous Memory*; ſo to contradict himſelf. If Fat be a concrete of Acid and Oily Parts, wherever there is Fat there is Acid; but there's Fat in Perſons under many Diſeaſes: I have open'd a Body, before now, that Dy'd of another Diſeaſe than Fatneſs, that cut two or three Inches in Fat upon the *Abdomen*: And Fatneſs in ſome, is Diſeaſe enough; and if your Doctrin were true, nothing could be more proper than *Alkalies* to Cure it. But farther Sir, If there be never any Acid in the Blood; but in a State of perfect Health: How can *Acids* Cure the Diſeaſes of the Blood: *Mortifie and Expel the luxuriant Alcalous Particles, reduce the ſerum to fluidity, make the too thick Blood thin, and the too thin Blood thick, The Miracles of Acids!* That he that can ſhew how this can be, what Acids taken in the Latitude can do, muſt be as Wiſe as *Solomon*, the Wiſeſt Man that ever was, or ſhall be. Yet you tell us, *That Acids produce theſe different things, by being differently ſpecificated with other things, but Acid is the ſoul of them.* And ſo *Solomon* is not the Wiſeſt Man, for you are as Wiſe as he. But tho' I believe there has been, or may be, one Man at leaſt Wiſer than *Solomon*, and you too Sir, I much queſtion whether he would be cunning enough to tell, how all theſe fine things come to paſs, which you ſay are done in the Blood of Diſeaſed Perſons by *Acids*, if as you ſay, there never comes any Acid there, but in a ſtate of perfect Health; or how he could make it appear, that the ſtomack ſo unerringly rejects to a grain, whatever of its beloved Acid is too much to be convey'd into the Blood, and yet is fooliſhly defective in letting in enough. But to leave theſe contradictions to their Author, and to perſwade you (at leaſt the Gentlemen, who are ſuch impartial Judges) that there is even too much Acid in the Blood in many Diſeaſes, I might firſt give you a Hundred Authorities from Famous and Learned Authors, but that Authority is nothing to you, who have cry'd down all the Phyſicians in the World. Yet methinks the judgment of ſome of them might be of ſome weight with you, eſpecially thoſe you

have

have commended, and perhaps the Gentlemen may believe them soon as you. Your Brother *Etmuller* asserts *Acids* in the blood as the cause of many Diseases: It would be endless to relate the Passages; so I shall give you but two or three. Of the first, says he, page 361. *Partis secundæ. Quoad causam efficientem acidum volatile Spirituosum sui tamen generis, seu specifici saporis spiritui influo maritatum synoviam imprimis, & partes vicinas membraceas inquinans, & affligens primarius Tortor est.* And pag. 394. *de malo Hypochondriaco, & scorbuto,* says he, *Causa proxima horum aliorum complicatorum est Stomachi cruditas Acida, sive Acidum ventriculi vitiosum, ex defectu vitioso digestionis primæ in stomacho eorum, a quo omnia reliqua symptomata originem ducunt.* And as for Fevers, says he, page 251. *Partis primæ. Consistere dicimus Febrim formaliter in fermentatione sanguinis præternaturali.* And page 252. *Æstus omnis occasionalis fit ab Acido crasin sanguinis imbutante, & inde fermentativum ejus motum, hinc Spirituum alterationem & majorem-incalcescentiam, & fervorem inducente.* And goes on to prove by many Arguments, that *Acid* is chiefly in the fault in Fevers. And page 369. he says, the same in relation to the *Small-Pox.* The forementioned *Hoffman* (the rather to be noted, because he Writes on purpose to contradict the fancy of those that would make *Acid*, and viscid the cause of all Diseases) gives us Instances, and Arguments to prove *Acids* the cause of many Diseases. Cap. 2. *De acido & viscido,* says he, *Cæterum quantis torturas acidum vitiosum in corpore nostro excitet, testantur Hypochondriaci, hysterici, scorbutici qui a levissimo acido mire sæpe læduntur acerbatis omnibus symptomatibus: testantur quoque id ipsum vomitus, sæpe tam corrosivi, ac tanta aciditate præditi ut vasa aenea, & ipsa lintamina, instar aquæ fortis, corrosa inde videas.* And gives us a relation of two Brothers, who by accustoming themselves to drink Vinegar, were brought, the one into an incurable stick Feaver with a Cough, and leanness of his whole Body, and horrid pain of his Feet; and the other, into very great disorders. And adds he, *Tandem observatu dignum quosdam qui quoties utuntur aceto, altero mane pruritus in fontanellis sentire manifesto indicio acidum intæstum, & integrum penetrantia corporis subire posse.* And your Master *Helmont*, because you have confess'd him a greater Man than you, may be heard saying, page 319. *Tormitur ab acido intestinorum, in lotio stranguria, in ulceribus corrosio, in Scabies, in artubus podagra, &c. Quod si experire velis, ad anum, emissa noviter absque dolore urina, aliquot saltem guttas vitæ aciduli immisce, & per syringam infice. Experieris te invito quod prædoceam. In latice quoque pluvitidem notham, suscitatur. At si archæus iu cruoris gremium leviculam sibi sinistro applicatam aciditatem*

tem deposuit; statim extravenatur, ejicitur a venis spreta, & apostem-
parit ubicunque id locorum contigerit: sin vero profundius in venis evenia-
pestilens aliquod Pathema insurgit. Quod probo quippe cruor aut ca-
ro nunquam acescunt absque actuali putrefactionis consecutione (quo-
alibi per carnes belluarum, sub canicula ocissime putrescentes, ideo ju-
culum acidum dantes probavi ex instituto) cruor enim acescens ma-
contra naturam venarum totiusque carnis indolem (quandiu vivit
coagulatur. But if your Master Helmont be despis'd with you
be pleas'd to hear what Father Hippocrates says, an Old Gen-
tleman so venerable among Physitians, that I never met with any
one yet that had the confidence to despise him; tho' many that
never read him. Says he in his Discourse *De veteri Medicina*.
Ἐνι γὰρ ἐν ἀνθρώπῳ καὶ πικρὸν καὶ ἀλμυρὸν καὶ γλυκὺ καὶ
ὀξύ καὶ στυφνὸν καὶ πλάσκαρον καὶ ἄλλα μυρία παντοίας
δυναμίας ἔχοντα, πλήθος τε καὶ ἰσχυρὸν. Ταῦτα μὲν
μειγνύμενα καὶ κεκρημένα ἀλλήλοισιν, ὅτε φανερόν
ᾗσιν ὅτε λυπτεῖ τὸ ἀνθρώπον. Ὅταν δὲ τι τῶν
ἀποκριθῇ καὶ αὐτὸ ἐφ' ἑαυτῷ γῆνηται, τότε καὶ φανερόν
ᾗσιν καὶ λυπτεῖ τὸ ἀνθρώπον. And again, τῶν βρωμα-
τικῶν ὅσα ἡμῶν ἀνεπιτήδεια ᾗσιν καὶ λυμαίνεται τὸ ἀνθρώ-
πον ἐμπιπτόντα τῶν ἑκαστὸν ἢ πικρὸν τι καὶ ἀκρητόν
ᾗσιν ἢ ἀλμυρὸν, ἢ ὀξύ ἢ ἄλλο τι ἀκρητόν τε καὶ ἰσχυρόν
καὶ διὰ τῆς τοιαύτης οὐσίας ἐπ' αὐτῶν ὥσπερ καὶ ἐπὶ
τῶν ἐκ τῶ σώματος ἀποκρινομένων. And a little af-
ter, εἰ γλυκὺς χυμὸς μεταβάλλοι εἰς ἄλλο εἶδος, μὴ
ἀπὸ ξυγκρησίως ἀλλ' αὐτὸς ὀξισάμενος ποῖός τις προ-
τὸ γῆνοιτο, πικρὸς ἢ ἀλμυρὸς ἢ στυφνὸς ἢ ὀξύς, ἄρα
ὀξύς χυμὸς ἀνεπιτήδεια, προσφόρων ἂν τῶν λοιπῶν
μάλιστα εἴη, εἴπερ ὁ γλυκὺς γὰρ πάντων ἐπιτηδεύεται.
Which, lest you should complain of *Heathen-Greek*, and say, *Non
potest legi*; I will give you in *English*, thus: For there is in Man
Bitter and Salt, and Sweet and Acid, and Astringent and Humid, and
others innumerable; having all Kinds of Faculties abundance
and Strength. These indeed, being mix'd and contemper'd with
one another, are neither apparent, nor hurt a Man: But when
either of these is separated, and is of it self; then it is apparent
and hurts a Man. And again, says he, of our Food, Whatso-
ever things are disagreeing and hurt a Man being taken in; each
of these is something Bitter and Intemperate, or Salt or Acid, or
something else intemperate and strong; and for this Cause we are
troubled

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troubl'd by them, as also by those things which are separated out of the Body. And a little after, says he, If the sweet Juice is chang'd to another Form, not by mixture; but being of it self what it was before, Bitter, or Salt, or Astringent, or Acid; but the *Acid* Juice is disagreeing, the rest being for the most part profitable, but the Sweet Juice of all is most agreeing. But if the Judgment of these Famous Men, be not enough; let me reason with you a little farther my self. How can Diseases if caus'd by *Alkali* (as you say) be Cur'd by *Acids*, but by *Acids* coming into the Blood. Must not there be some time for their Operation there, before they can mortifie and expel the Abundant *Alkali*, so as that *Acid* must be in the Blood, while the Person is, yet Diseas'd? Or, do's *Alkali* leap out at one Door as affrighted, seeing *Acid* with his sour Face coming in at another? Are your Cures all so sudden? No *John*, I suppose not. But altho' there were no *Acid*-Doctor to convey sour Liquors into the Blood; yet I say, there may be *Acid*, and that too much, in the Blood of a Diseas'd Person, as the cause of his Disease. It's undoubted among Physicians, that the Health of the Body, very much consists in the due Temper and Consistence of the Blood, and other Liquors of the Body, that they be neither too thick nor too thin. If they be too thick, they cannot pass freely through the small Vessels, and circulate through the *Aanastomoses* of the Arteries and Veins, but stick and cause Obstructions; whence arise Swellings and Pains, by distention of the Parts, and the Liquors stagnating; get a fermentative Motion, and so corrupt and corrode the solid Parts, and produce Ulcers: But if the Obstruction be sooner open'd, and the Coagulated Parts be carry'd along again into the Mass of Blood; it is thereby retarded in its motion, before the Particles can be separated; from whence may proceed divers Disorders. Now it's certain, that *Acids* coagulate and thicken the Blood, and other Juices of the Body, as any one may see by mixing a little *Acid* Liquor, as Oyl of *Vitrol*, sp. of *Niter*, Oyl of *Sulphur*, &c. with a little Blood, or *Serum*: The *Acids* turning the *Serum* into thick white Corruption, and the Red part into a tough black Matter. So *Acid* Liquors injected into the Veins of Animals kill them by coagulating their Blood: When on the other Hand, *Alkalous* Liquors make the Blood more thin and florid, on which account it cannot be thought, by any Body that has his Senses, that when the Blood is too thick, or coagulated, 'its caus'd by *Alkalies*, and not by *Acids*. You said Mr. *Acid*, that *Whoever shou'd take upon them to Answer any thing you have said, unless they back their Arguments with Experiments, you should take no notice of them*. But truly Sir, you have not back'd your Assertion. That *Acids* make the

Blood

Blood thin when too thick, with Experiments. I would counsel the Gentlemen to do it for you, and they will see how friendly your *Acids* are to the Blood. Besides, that there's too much *Acid* in the Blood, in some Diseases, may fairly be argu'd, a *Fervantibus & Sedentibus*. It being commonly seen, that Persons afflicted with some Diseases, are very much hurt and the Symptoms exasperated by the use of *Acids*, as *Hypocondriacks*, *Hysterical* and *Scorbutick* Persons, those afflicted with divers kinds of Ulcers and that have Issues: On the contrary Reliev'd, Eas'd and Heal'd by *Alkalies*; as is well known to Physicians and Chirurgeons. Farther, to satisfie you, because by all the ways you could yet contrive, you have not been able to procure one Grain of pure *Acid* from the Blood either of Healthy, or Sick People. I'll teach you. From the Blood of either Diseas'd or Healthy Persons, as also from their Urine which is separated, from thence you may get a *Sal salsum*, like Sea-Salt, which you say, is an *Acid*; but I say, yields an *Acid* by Distillation, and from Flesh and Blood, as well as from Urine, may be got the *Phosphorus*, which is an Oyl coagulated into an open Sulphur, by an *Acid*; which *Acid* may be as easily separated, as the *Acid* is from common Sulphur, which is easie enough, tho' you say, 'tis no easie matter to do it. And from Urine, an excrement of the Blood, besides *Phosphorus*, I have made a perfect burning Sulphur, without any addition of any Body that could yield it, or help to compose it; which Sulphur would make good Matches, and might be Distill'd into Oyl of Sulphur, *per Campanam* as easily as any other Sulphur; and every thing is dissolv'd, you say, into that of which it was made. But I say, not by every sort of Dissolution. But that in a common Distillation of Blood, by such a Distiller as your self, there's no *Acid* produc'd, is easie to answer, by an Experiment or two. For instance, I will take an *Alkali*, and mix with it a considerable quantity of an *Acid*, and you shall Distill them, and shall not get one Grain of *Acid*; but an *Alkalous* Liquor. Again, I will take an *Alkali*, and mix an *Acid* with it, and you shall Distill them, and shall not get one Grain of *Acid*; but they shall both unite, and both come over in a Liquor, neither an *Alkali*, nor *Acid* but a *salsum*. Again, I will take an *Alkali*, and mix an *Acid* with it, and you shall Distill them, and shall get neither *Acid*, *Alkali* nor *Salsum*; but a burning Oyl. Which things, if you are a Chymist, as you profess, you can't be Ignorant of. From which Experiments, it may easly be believ'd, that tho' there may be a small quantity of *Acid*, actually in the Blood, yea, a large quantity in comparison of what there should be; yet the *Alkali* far exceeding it; the *Acid* may be so far alter'd by the Fire, or lock'd up with the *Alkali*, as to come over as an *Alkali*, or remain

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remain a *Salsum*? And though a mere *Salsum* cannot truly be said to be either an *Acid*, or an *Alkali*, or have an affect as either, Whatever separations or alterations the Fire, may make from it, or upon it; yet it is certain that the Natural or Artificial Conjunction of an *Acid* with an *Alkali*, does make a *Salsum*, and nothing is more common, than to have the Blood apparently Salt, even to the taste, in many Cases, in some more, some less; which *Salsum* (tho' the *Acid* that is coagulated with the *Alkali* were not separate in the Body first, and so capable of hurting) is very likely as a *Salsum*, to be the Cause of divers Diseases, when it too much abounds; which we may easily believe, from this Consideration, That it's well known, that the Eating too much common Salt, is the Cause of many Disorders. As for instance *Seamen* (as you confess) *who live upon Salt-meat, and Salt-fish, are more troubled with the Scurvey than others*, nor as you say, *because they eat more Flesh and Fish (which abound with Alkalious parts) than others*: For others that eat as much Flesh and Fish, and that fresh too, are not so much troubled with it, but because their Flesh and Fish is more Salt, and is also kept longer, whereby the Spiritous and Volatile parts are exhald, and so yield a grosser Chyle. Nor as you say, *That the moist Air hinders perspiration*; For it is well known, That Men at Sea generally eat more, and void fewer Excrements of the Belly, than at Land, and consequently perspire more. Nor is the *Sea-Salt* carry'd off all by Urine, it being to be found in a greater or lesser quantity in the Blood, and other Liquors of the Body. Nor can *Sea Salt*, and any *Alkali* make a *Sal Armoniac*, as you tell us, either in the Body, or by a Pyrothechnical Conjunction; unless the *Sea-Salt* be first an *Acid*, as I have found by experience, and any body may see that will try to make a *Sal Armoniac*. And tho' the Air at Sea should hinder sweat, as you say, yet it furthers Perspiration; whereby the *Alkalies* if they could do any hurt, may be carry'd off, if that be suppos'd the course they ought to go. And that we perspire more when we don't sweat, than when we do (tho' it may seem strange to some) might be urg'd by divers Reasons, if it were necessary, and may be try'd by Staticks. How an *Acid* Spirit should be Distill'd from *Sea-Salt* while in the Blood, or other Liquors of the Body, I confess I see not, but I know by certain Experience, that there's often separated, or produc'd in the Stomach, a *Praternatural Acid*, a kind of Vinegar, from things taken in, that are fermentable into Vinegar; as Sugar, Honey, Bread, strong Liquors; which tho' in their first ingested Form, could not be truly call'd *Acids*, yet become very strong ones, and if they were *Acids* grow stronger. Besides, every one knows, that

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that we Eat and Drink things already sour, both which we know, are not always rejected by Vomit (as Mr. *Acid* saies) But notwithstanding, there's a more strict Guard for keeping the *Acids* out of the Blood, viz, the Gall pouring out its forces upon them in the small Guts; yet it's very probable that some *Acid* Particles more than should so do, may pass this Watch, and get in with the Chyle into the Veins; of which Enemy, we are after aware, by the disturbance made in the Vital Oeconomy, which Physicians of any considerable Judgment and Practice will easily be perswaded of. But I shall here give you two or three Instances of *Acids*, found even separate in farther Recesses than the Stomach and Guts. One instance was in a Cancerous-Breast, Cut off by one Mr. *Smith* a Chirurgion of the Hospital (divers other Persons testifying the truth of the matter, being present) who when he had done the Operation, and came to examine the Breast, opening a Cistus, found therein a Liquor, which being pour'd on the Ground fermented as it were *Aqua fortis*; which when he adventured to taste was an *Acid*, and withall so penetrating and venomous, that he could not wash away the taste; but it Infested his whole Body; so as to be the occasion of his Death within some few Months, as he himself affirm'd, on his Death-bed, to an Eminent Physician, who gave me the Account, and was also at the Amputation. Again, *Etmuller* tells you, in *Medicina Hippocratea*, Cap. 2. That he was acquainted with a Youth vehemently afflicted with the Itch, whose Itchey-Ulcers being open'd by scratching, pour'd forth a serous Liquor of a manifestly *Acid* odour, as it were of a subtil and penetrating Vinegar. And that he saw a Scorbutick Young Man, who in a Morning yet fasting, spit such a sharp bloody Spittle upon a firm double Paper, that it was thence in a short time corroded. Another instance you have in *Art. Med. Hassn.* Vol. 4. Pag. 174. Where it's observ'd that the Sweat of an Hydropick Person was *Acid* coagulating Milk. Besides, the Cure of Ulcers, Itch, Erysipelas's, &c. which I have often done by Absorbents and manifest *Alkalies*, arguing *Acids* to abound in these Cases. I don't question, but if we try other proper ways, *Acids* would be found in divers Ulcers, tho' Mr. *Smith's* fate, is enough to discourage one from Tasting. But you say, the Blood of Diseased Persons contains or yields more *Alkali*, than that of Sound Persons. I answer, It's a more difficult thing than you, or any other young Chymist would imagine, exactly to find the quantity of *Alkali-Salt* in a parcel of Blood. To separate the Volatile-Salt wholly from the Phlegm, and from the Oyl, and both of them from the *Caput mort.* will be found too hard a Task for an older Work-man than your self. The difficulty of giving an exact account of the
con-

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contents of a parcel of Blood, will appear from divers Considerations. Blood is a Body that will swell up as it dries, so that the top of the matter will have less Heat than the bottom, and retain some of the Volatile Parts; so that if you don't take it out and Distil part of it again in another Retort, you will not get all, and notwithstanding all the care possible, some of the Volatile parts will be lost in working; so that the most wary Artist, do what he can, will not be able to say, Here's all the *Alkali*, or Oyl, contain'd in so much Blood. But there will be still greater Difficulties in giving the true Contents in divers parcels of Blood; for if you should take a Pound, or any other quantity of Blood, and divide it into equal parts, and Distil one half in one Retort, the other in another, the products would not be the same. For the different degrees of Fire that might happen, different time of Distilling, and taking off, and separating the Phlegm, Oyl, and Salt, the different closeness of Luteing, yea, the very shapes and sizes of the Retorts and Receivers, would almost in inevitably cause different Products. Farther, the Bloods of divers Persons, tho' all in Health, or of one healthy Person, took at divers times, would as much differ in the Products, as that of the Diseas'd and Healthy, as well as vary upon other Tryals. As I have seen the Sweat of a Person in perfect Health, turn Syrup of *Violets Green* readily, when the very *ichor* and corruption in the pustles of the *Small-Pox*, would hardly alter its colour into a discernable Greenness. So the Blood of the same Diseas'd Person, taken at one time or state of the Disease, would as much differ from that taken at another time, as either of them would from a Sound Person's; having sometimes more, sometimes less *Serum*. So that I must tell you, you have not been a Chymist long enough, to deserve Credit, since it appears you have not yet Learn'd to speak modestly and wryly; but confidently give us, from small and odd quantities of Blood (the more difficult, to be exact in) so many Drachms, Scruples, and Grains as the certain Contents of Phlegm, Salt, Oyl, and *Caput mort.* from which exact account the sagacious Mr. Boyle excus'd himself: And no expert Chymist will readily pretend to give. But you Sir, pretend to give us the true Proportion of *Alkalies* in a Gouty Man's Blood, and a well Man's; when you have Distill'd perhaps but two or three well Men's Blood, and one or two Gouty Men's Blood. Do you not think the Bloods of Gouty Men differ, as well as the Bloods of well Men? Let us have the products of a Pound of Blood, from one hundred well Men's Bloods, or so many sick Men's Bloods; and if they are exactly the same, then you may do something toward perswading us to harken to you: Or if you can tell us the exact proportion

and

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and difference of the Products of an *Acid* Doctor's Blood from those of an *Alkali* Doctor's : Till which, I shall never expect to find your Experiments in your promis'd Book of Blood, as clear Demonstrations of your Hypothesis, as what is given by the greatest Mathematicians ; unless you mean, as clear Demonstrations, as they give of your Hypothesis, and not of their own Propositions. And if all the vast Capacities of the College, and you to direct them, should ever so Critically (Analyze, as you call it) the Blood of Persons in all Diseases (which by the way, I tell you, could not well be done, when *Phlebotomy* in some Diseases is pernicious,) I say, they would be far from knowing certainly, the Cause of all Diseases ; if all Diseases could be thought to lie in the Blood : For many Reasons, apparent to every considerate and experienc'd Naturalist : Tho' a *Tyro* may believe, by his Art he can do all things ; even shew a Man in the Distillation of a little of his Wife's Blood, without ever seeing her, that she has got the *Pox* ; and the very Face of the Spark that Clap'd her, with as great confidence, as some young Logicians, believe, by a Syllogisme, they can prove the Moon made of Green-Cheese : Or as I have heard one seriously assert, That by Logick, one might prove a Man to be a Horse, or a Horse to be an Ass. But let us suppose, that *John* has guess'd right (tho' not Demonstrated) that a quantity of the Blood of one, or another Disease'd Person in some Distempers being Distill'd yields more *Alkali*, than as much of the Blood of some one, or other Healthy Person (for he has made but few tryals :) It will not prove, that in those Distempers, too much *Alkali* was the cause of the Disease, and not too much *Acid*. For instance, in the *Small-Pox*, *Scurvey*, *Gout*, where he particularly asserts, he has found the Blood abounding with *Alkali* more than in Sound Persons : I say, that in those, and some other Distempers we may reasonably suppose, that the *Acid* Particles meeting some of the *Alkalous*, are Precipitated, and fix'd in the extremities ; so that the rest of the Mass of Blood flowing in the Veins and Arteries is depurated, and more free from Acidity, and so in Distillation, may possibly yield a greater proportion of *Alkali*. But I find you Mr. *Acid*, make a few slight and inaccurate Experiments, making them all serve your Hypothesis, running away with your *Eupexor* with as little consideration and as great mistakes, as any body I have met with. You boast your self better Skill'd in the Anatomy of the Juices, than others, and that, you are able to do more than other People. Truly Sir, I find no Argument of your greater Skill, or doing more than others ; we have but your own word for it. But pray let me hear what knowledge you have got of the Nature and

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and Properties of some other of the Liquors of the Body? What say you to the *Saliva*, the first we meet with.

Ac. The Spittle is highly impregnated with a penetrating *Saline Spirit*, which appears from its killing *Mercury*, which nothing will do, but things manifestly *Saline*: This matter separated by the *Oral Glands*, is impregnated with a *Volatile Acid*, as manifestly appears: And was design'd to impregnate our Food, and to dissolve it in the Stomach, and turn it into a substance fit for Nutrition: For there's no innate ferment in the Stomach: And that this *Menstruum* the *Saliva*, is an *Acid*, appears by numerous Experiments; yea, all noble *Menstruums*, I know of, are *Acids*, in the three Kingdoms.

Al. You still go on to shew your daring Confidence and Indiscretion, in asserting positively, things you have but the least appearance of Reason for. You say, the Spittle is highly impregnated with a *Saline Spirit*, with a noble *volatile Acid*: That it manifestly appears to be an *Acid* and that from numerous Experiments; when you have made none: And give us no other Argument, but that of its killing *Mercury*, which you say, nothing will do, but things manifestly *Saline*. Here is a Liquor, I find you have never Anatomiz'd; here *Mercury* alone, resolves your Question, who as the Old Woman saies, is kill'd by Fastening-spittle: But I must tell you, the Old Woman had but one Eye, and so thought that *Mercury* was dead and bury'd, when the Wagg lay grinning, on the Blind-side of her: And you are as Blind a Chymist as she, if you talk of killing of *Mercury* thus, to Physicians and Philosophers. But you talk as a Mountebank, to the Vulgar. Well, Spittle in a Vulgar sense, kills *Mercury*: But what does it really do to it? Why it divides it, being rubb'd together, into small Particles, that a dull Eye cannot perceive them. And this is done by nothing, but things manifestly *Saline*, say you. I see the Clerk has forgot that ever he was a Sexton, Mr. Doctor, if your *Memory* had not been Treacherous, you might have remembred, That when you was an Apothecary's Boy at Worcester, your Master was not so imperfect in his Art, but that he taught you, that *Turpentine*, would thus kill *Quick-silver*, and *Turpentine*, it is well known, is not manifestly *Saline*: I believe, you would be hardly put to it, to get me a Salt from it, or any thing of a *Saline* nature. Greese likewise is a Body, whereby the Particles of *Mercury* may be divided; or almost any Body of a soft clammy Consistence: not from any thing *Saline* in such Bodies; but from their consisting of ramous flexible Parts, whereby they are apt to enwrap and entangle the globules of *Mercury*; yea, even dead and insipid *Calxes*, or other Powders, may be rubb'd with *Mercury*, so as to do, what you call

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killing, tho' with more labour. As for things manifestly *Saline* (except those *Acid* Spirits, that dissolve *Mercury*) they are still farther from doing the business, than *Unctuous Bodies*. As if you take common *Sale*, you shall find it more difficult to kill *Mercury* therewith, than with *Turpentine* or *Grease*; and with some *Saline* Liquors it will not be done at all. But if you had made as many Experiments on the *Saliva*, as you would have us believe, you would have found, that according to your own method of trying things, it is not manifestly *Acid*: (Not to mention the judgment by the Taste) you know, that manifest *Acids* turn Syrup of *Violets* Red; Spittle in all the Tryals that I have made, (which have not been a few) never turn'd the Syrup Red, but Green, more or less; which tho' I will not say, is alone an infallible Argument, to prove it an *Alkali*; yet I say, it is enough to prove it not an *Acid*. I acknowledg indeed, as it's most Reasonable to do, that the *Saliva*, must be thought to differ, as the Blood from whence it's separated, differs in divers Persons, and may be *Acid* in some Diseases, as I noted before: And the most of the Tryals I have made on this Liquor, were on the *Saline* of Sound Persons. I will not venture to determine, that Mr. *Acid's Saliva* must be an *Alkali*: When he uses so much Vinegar, Lemons and Oranges, Oyl of *Vitriol*, &c. or that his old Patients, may not spit *Acid*: But what I have try'd, has been from those that often Eat and Drink *Acid* things, and are sometimes troubled with too much Acidity in their Stomachs, and yet I could find no signs of *Acid* in their *Saliva*; Tho' I mix'd it with Milk, and let it stand to see whether it would thereby turn sour the sooner: I found that another parcel that had none in it, was turn'd sooner than that. But this is Observable, tho' Spittle is often more thick and clammy than the *Serum* of Blood; yet it will not so soon be coagulated by the Fire, and not at all by *Acid* Spirits, as Blood and its *Serum* will: And as Blood, *Serum*, and other Animal substances evaporated on the Fire, will give but an unpleasant Smell; on the contrary, I have always found Spittle when evaporated (if not so far as to be burnt) yield a grateful Savour. But let us see what this Liquor appears by *Pyrotechnical* examination, taking your own Rules for the present (tho' I may dissent from them another time) *That those things which by Distillation yield a greater quantity of Acid than of Alkalious Substance, are to be reputed Acids, & vice versa, and that every thing is dissolv'd into that of which it was made.* Take the *Saliva* of a Sound Person (as I did, a good quantity; because it yields but little beside *Phlegm*: Distill it gently in a Retort, and you will find the greatest part of it come over in an insipid Water, or *Phlegm*; when you see the matter in the Bottom dry, increase the Fire, and there will come

over an *Alkalous Spirit* in White fumes, and after that a black stinking Oyl: The Spirit is very like that Distill'd from Blood, turns Syrup of *Violets Green* presently, and ferments with *Acids*, and in the first Distillation I have observed a volatile Salt, stick in the Neck of the Retort. From the *Caput mort.* is Extracted with Water, a small quantity of *Sal salsum*, very like common Salt; which is so far from turning Syrup of *Violets Red*, that it inclines it to a Greenness, and is dissolv'd by and ferments with Oyl of *Vitriol*, like common Salt. Where shall we find your Noble *Acid Menstruum* now Sir? And where are the numerous Experiments, whereby it appears to be *Acid*? You first concluded the *Saliva* to be a Noble *Menstruum*, I suppose, and all the Noble *Menstruums*, in the Three Kingdoms, you know of, being *Acids*: Therefore this must be an *Acid*. I dare say: you know no Noble *Menstrum* in either of the Three Kingdoms; and I question, whether you ever saw an Ounce of *Acid Menstruum* from the Animal Kingdom, tho' there is such a thing to be had in great quantity. It has been the Opinion of many Physicians, That there is an *Acid Menstrum*, or Ferment in the Stomach: You say, there is no innate Ferment there: But the *Saliva* was design'd to impregnate our Food, and dissolve it in the Stomach. I must tell you, there's no need of an *Acid Menstruum*, or Ferment in the Stomach, either there generated, or brought from some other Part. As for my own Stomach, I have a Capacity of knowing what is in it at all times, which few Men have; and I always observe, when my Stomach is in best order, there is no *Acid* there; not so much as to curdle Milk, or turn Syrup of *Violets Red*: But whenever there is an *Acid*, is is produced from something or other ingested, and is preternatural, and disagreeing: And I very seldom find my Stomach out of order, but from things ingested, that are, or turn sour, or else from things too fat and oily. I will not here contend with those who make the *Saliva* the *Menstruum*, or Ferment of the Stomach, if it has any thing properly so call'd; But I see no mote reason to think, that the separation, division, or alteration of our Food, is performed by virtue of that small quantity of *alkali*, Salt, Oyl, or *Salsum*, produc'd from the *Saliva*, by the Fire; than that the inebriating quality of Wine proceeds from a volatile *Alkalous Spirit*, that by Art, is therehence obtain'd. But I conclude, that unless Mankind have divers sorts of Ferments, or *Menstruums* in their Stomachs, there's never any manifest *Acid* requir'd there, or produc'd, but what is preternatural.

Ac. It's well known, few People are troubled with Acidity in their Stomachs, but those that use very little Exercise, or live a sedentary Life; by which means, the Chyle when made,

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for want of motion (the fibers of the Stomach also having lost their tone, and become lax) is not soon enough carry'd out of the Stomach, and lying there too long, the greatest part is turn'd into a substance like unto the Ferment, which at first dissolv'd it; it being the nature of Ferments to endeavour the change of those things they are mix'd with into their own nature: And that some may say, How shall this *Acid* be kept from being convey'd into the Blood, and so being the Cause of Diseases. I answer, Those that have an extraordinary Acidity in their Stomachs, 1st. Make Water often, and in large quantities. 2^{dy}. Are very Lean. 3^{ly}. Are Costive, all which Symptoms are for want of the *Acid* of the Stomach's being convey'd into the Blood. They make more Water, because the solid Food is by too much *Acid* attenuated, and converted into a thin substance, which by the pressure of the Liver on the Stomach, instead of passing thro' the *Pylorus*, is squeez'd thro' certain Vessels which pass from the bottom of the Stomach to the Kidneys, and so carry'd off by Urine. And that there are such Vessels, see *Doleus. Encyclopad. Med. pag. 359.* I suppose says he, liquid Substances may be convey'd from the Stomach thro' the *Omentum* to the Kidneys, hence those Animals that have no Gall, make no Water, as Birds and Fishes: For confirmation of which Opinion, I have Dissected Animals gorging them with Water before, and found the Vessels of the Caul very turgid. In Hydropical People I have Dissected, I have found the Caul either torn, putrify'd, or obstructed with *Oedematous Tumours*; whence it follows, Liquids contain'd in the Stomach, must fall into the *Abdomen*. Also a Person Cut for an *Omental Rupture*, part of the Caul being Cut away, had a difficulty of making Water, and if he Drink much has a pain and weight at his Stomach, and is always Loose: Hence in my Conjecture, some Vessels that carry the Urine right on to the *Emulgents* were Cut, by which means, all the Drink he drank, was carry'd into the *Duodenum*. It is therefore certain, that Liquid Substances lying at the bottom of the Stomach, pass thro' in that part which is join'd to the Caul, and if those Vessels, or the Caul it self are broken, putrify'd, or obstructed; it necessarily follows, that the Liquid Substances contain'd in the Stomach, must be let fall into the Cavity of the *Abdomen*, and so a *Dropsie* is caus'd. Thus *Doleus*. From this Doctrine may be great consolation to People labouring under the *Stone*. A reason I believe, Persons have not made such diligent search for such Medicines, has been a supposition, that scarce any Medicine could retain its Vertue thro' so many alterations: But were they satisfy'd of this Shorter Cut, they would not think the dissolving the Stone, so hard a Task: Farther to prove the Existence of these Passages,

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and that the Medicines may pass unalter'd to the Kidneys and Bladder: Take these two Cases, 1st. A Person that had not made Water in two Days, and had an intolerable pain in his Back, I gave him some Medicines, and in an Hour and half's time he was well, having piss'd two Chamber-pots full, and in the first two Spoonfulls of small Stones. Now had these Medicines been convey'd through the *Lacteal* Veins and so on through the Blood, it had been impossible the Effect should have been so soon, or the Medicines not altered, or totally destroyed. Another Person afflicted with the Stone in the Bladder Nine Months, and despaired of a Cure, all common means being used in vain, was at last prevail'd with to send for me, and to try what I could do for her: Upon Monday Morning she began to take my Medicines, and on Wednesday Night, I Examin'd her Water, and found some small pieces of Stones in it, and Tasting the Water, I could discern the Taste of the Medicines, as vigorous as they were before they were taken: On Thursday Morning she sent to acquaint me, she was perfectly well; and visiting her, I found she had voided a stone an Inch and half and a quarter long, three Inches and a half round. I could add several instances of this nature; but these two I think sufficient, and plain Demonstrations that there are such Vessels. Nay, I don't question, but suddenly to make it appear by ocular Demonstration. Secondly, Those People who abound with Acidity in their Stomachs are Lean, because the solid Food, being overattenuated, is made capable of passing thro' these Vessels, and the grosser is convey'd to the Guts, and having but few Nutritious Particles, Leanness must needs follow: And as I said, that Leanness is for want of *Acid* in the Blood, appears that Fat is nothing but a concrete of *Acid*, and Oily Parts: When the Blood is destitute of *Acids*, and abounds with *Alkalies*, as it doth with all People who have too much *Acid* in their Stomachs, the Blood destitute of *Acids* to coagulate the Oyl, there can be no Fat produced: And that already generated, having its *Acid* mortify'd by *Alkalies*, looses its consistence, and is turned into a thin Oyl, and when the Oyl is gone, the *Alkalies* prey on the Muscles, Nerves, and Fibers, and cause general Disorders. Thirdly, Those troubled with Acidity in the Stomach, are Costive, because the more thin Parts are carry'd off by the Urinary Vessels. But it may be objected, How comes it to pass that *Steel* which is an *Acid* Cures *Atrophies*, and does not exasperate them, by increasing the Acidity in the Stomach. I answer, *Steel* cannot be convey'd into the Blood before it be turn'd into *Vitriol*, and therefore it is necessary to give it unprepar'd to People of *Acid* Stomachs: By it the *Acid* is so embody'd that it can't pass thro' the Urinary

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Vessels, and is hindred from attenuating the Chyle, and so being mix'd with the Chyle, they are together convey'd into the small Guts, and so on to the Blood, where by its Stryptick Acidity it confirms the texture of the Blood, and mortifies the *Alkalous* Particles.

Al. That few People are troubled with Acidity in their Stomachs, but those that live a Sedentary Life, or use little Exercise, is not true; unless by a sedentary Life, you mean sitting much at Taverns and Ale-Houses, where the Drinking fermentable Liquors, produce too much Acidity in the Stomachs of many Persons: but of those that seldom use such sitting, but live the most stirring Lives, I have known more three to one, troubled with sour Stomachs, than of those that use little Exercise. The *Saliva* which you account the ferment of the Stomach, I have shew'd is not an *Acid* in its natural State; and tho' from the small quantity of *Salsum* got from it, an *Acid* may be Distill'd; yet in the Stomach, it acts not as an *Acid*, and so it cannot change the Food into Acidity, by being too long retain'd in the Stomach, for want of Exercise: But when there's any *Acid* in the Stomach, 'tis as I have said, from things ingested, consisting of divers Particles apt to ferment, assisted by the Heat and Moisture in the Stomach. As to your assertion, that those People that have too much Acidity in their Stomachs, make Water often, and much, are very Lean, are Costive, supposing it true (for it wants proof) and that they are so, because by this Acidity, (which you say, ought to be convey'd into the Blood) the Food is attenuated, and converted into a thin Substance; and so by the pressure of the Liver squeez'd thro' certain Vessels, which pass from the bottom of the Stomach to the Kidneys, and so is carry'd off by Urine. I say, you shou'd first be sure that there are such Vessels; which you can never be, but by being skill'd in the Anatomy of the Solid Parts, and so having a *Qualification to talk finely*: For to talk truly of things seen with ones own Eyes, is the finest talk that can be in Anatomy. You should not have built so great a Superstructure, on a Foundation you have no Knowledge of: But had better have stay'd a little, till you had given an Occular Demonstration of these Vessels; since you believe, you shall so suddenly be able to do it, and when you had found them, you might have Talk'd more finely. For your two Observations, and *Doleus's* to help you, are not sufficient and plain Demonstrations, as you say. Let us consider both your Author's and your own Arguments, *Doleus* does but suppose there may be such a Passage thro' the *Omentum* to the Kidneys; but to strengthen his supposition, he tells us, those Animals that have no Caul, make no Water: He shou'd have said, those

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those Animals, that have no Caul, have no Kidneys : And if that had been true, it might have look'd like an Argument that they do not Piss : But if there are Animals that have no Caul, and yet have Kidneys, as Birds have : what use are they for, if not to separate some serous matter from the Blood ? and tho' they do not Piss in the manner, as some Animals do, being more dry and perspiring much ; yet there is, as is well known, a passage from their Reins, into the common passage of the thicker Excrements. In his Dissection of Animals first gorged with Water, and finding the Vessels of the Caul turgid ; he shou'd have certify'd himself, that those Vessels were turgid with the Water that was reciev'd into the Stomach, and have seen that he could press it out of the Stomach into them, and out of them into the Kidneys, and where they were inserted. And as for the Dissection of Hydropical Persons, tho' he found the Caul so affected, it might be but the concomitant, or Effect of the *Dropsie*, and not the Cause ; unless he could assure himself, it was so in all *Hydropicks*. The Caul's being obstructed, rather argues against him, that the Liquid Matter could not pass that way. As to the Person whose Caul was part Cut away, it can't be Rationally thought that a difficulty of making Water, shou'd be caus'd by the Urinary Liquors not being transmitted to the Kidneys, but rather, from its being obstructed in the Bladder, from some other Cause than the Cutting of his *Omentum* : Nor is he certain, that the pain and weight in the Man's Stomach, and looseness when he Drank much, was not from some other Reason. As for your Consolation, for Persons trouble with the *Stone* ; you see of what use, Skill in the Anatomy of the Solid Parts would be now, if you had it. But I know no Physicians that have Study'd the Nature and Causes of the *Stone*, and the possible and likely ways of its Dissolution in the Reins, or Bladder ; but have at the same time, concluded nothing likely to Dissolve it, but what's as well unchangeable by any of the Ferments of the Body, as inoffensive to the passages of Urine ; neither of which Requisites are to be found in your Noble *Acid Menstruums*, being coagulable by *Alkalies*, where ever they meet, and so offensive and intolerable to the Urinary Vessels, that were there indeed such a short cut as you fancy, for them to pass unchanged to the Reins and Bladder, you might Cure the Patient quickly ; but it would go near to be by Death more painful than that by the *Stone* it self : And wo be to all your Patients Reins and Bladders ; the giving of *Catharides* would be nothing to your *Acids*, which will not only cause intolerable *Stranguaries*, but even corrode the Bladder, as any one may find, if he has a mind to try. But you Mr. *Acid*, who think you have found a nearer way to the

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Wood than others, and so do not think the Dissolution of the Stone so hard a Task, I am apt to presume, will be long enough before you can do the College and Mankind, so great a piece of service as to spoil Dr. *Groenvelt* the Famous *Lithotomist's* Trade. As for your two Cases, you think Demonstrations of the aforesaid Passages, the Man Cur'd of the stoppage of Urine in an Hour and half time, and the Woman troubled with the Stone (as you say) who took your Medicines on *Monday* Morning, which you Tasted on *Wednesday* Night in her Urine, and was well by *Thursday* Morning: I don't question, tho' you give no more than these two, but that you could give us a Hundred more such Stories: But if we suppose, these matters of Fact true, I say, the speediest of your Cures is not so sudden, as to make it necessary to conclude, that the Medicines could not go a longer March, and thro' more difficulties than if they be suppos'd to pass by the way of the *Lacteal*-Veins. Almost every one's Experience, will certify them of more sudden Effects of things taken into the Body, in the remotest Parts from the Stomach. When we are faint and weak by Fasting, and take Meat and Drink, we soon feel a sensible Refreshment and Strength throughout the whole Body, and those that take too much Vinous Liquors, in a very short time, will feel the Effects thereof in their very Finger-ends. Besides its well known, that divers things taken into the Stomach, will in half an Hours time produce their Effects in the very Skin, causing copious Sweats. And what's more, I my self, have Experienc'd that the mere Tasting a thing, has in a few Minutes time wrought by Sweat, Vomiting and Purging: Nay, some things apply'd outwardly, will very soon both Purge and Vomit; the Particles of which can't be communicated to the Stomach, but by a longer way than from the Stomach to the Kidneys by the *Lacteals*. And as for the Tasting of things in the Urine; I say, you never Tasted any of your *Acids* there: But whatever you might Taste in the Urine, it's no Argument of your short passage: The Taste of things is oft found remaining, where they must be suppos'd to have pass'd the *Lacteals*. Every Country-Woman knows it by Experience, that Crow Gerlick will not only be very strongly Tasted in her Cow's-Milk, but will hardly ever be lost in the Cheese made thereof. As for the total destruction of things, you talk of; there's no such thing in Nature. And as to your fancy, that those troubled with sour Stomachs, make Water often, and much; I in my self Experience the contrary, being commonly troubled with too much Acidity, if I Drink any considerable quantity of Fermented Liquors, and yet I have seldom met with any but will Piss once, or twice, before I have any such motion; neither do I find my self make more Water, when troubled

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bled with a sour Stomach, than at other times. Nor are *Acids* so apt to attenuate the Nutritious Parts of our Food: Every one that knows how to make a Posslet can tell you, that the more Nutritive part of Milk, is curdled, and hardened by *Acids*: And our Chyle it self is of the Nature of Milk. As for leanness, that it is caused by want of *Acid* in the Blood to coagulate the Oyl, it is but your fancy. If you had examin'd Fat by the Fire, or any way whereby you may judg of it, you would not have found it more *Acid* than Flesh or Blood; but have found it past your Art to separate it into an *Acid* and an Oyl, nor did you ever take *Acid* and Oyl mixed with a great deal of water, and coagulate them into Fat by such a heat, as that of our Body. You may indeed coagulate Oyl into Brimstone by an *Acid*, but you must use such a heat, as cannot be supposed in the body of an Animal, and your *Acid* must be stronger, and your Oyl more undivided, than they can be supposed to be while diluted, and mixed with the aqueous, and *Alkalus* Liquors of the Body. If you had understood Soap-making, you might have seen Oyl and Greese coagulated, and hardened by strong boyling with fixed *Alkalies* instead of being made thin, and you should have try'd whether Volatile *Alkalies* would turn Fat into a thin Oyl, before you had so positively asserted it: For it is well known on the contrary, that Vinegar is given with success to those that are too fat: An example of which, see *Cottieri* Obj. 23. p. 44. in a Military Man that was very fat, who by continual use of Vinegar, decreased eighty seven Pounds. And for the coarseness of those troubled with sour Stomachs, I also experienced the contrary, being seldom or never coarsive especially when troubled with too much Acidity in my Stomach: But we come to your own raised Objection: How can Steel, an *Acid*, cure *Atrophies*, and not rather exasperate them by increasing Acidity in the Stomach? Here Mr. *Acid* you had given us some of your deep thoughts in a rare discovery, that Steel has that excellent property to carry the preternatural *Acid* of the Stomach into the Blood, there to do fine feats: But we must take in upon your word, for you have not proved by any Experiment, that Steel thus ushers the *Acid* in through the *Lactal* Veins, which would without its assistance, have been let down at the invisible trap-doors in the bottom of the Stomach: You suppose the *Acid* too gross, when turn'd into Vitriol to pass those fine outlets, which I confess are so fine, that I could never see them; but Vitriol I know when dissolved (and it cannot be supposed long in a coagulated form in the Stomach) will pass very fine filters, and insinuate itself through the pores of Vessels, that will hold divers other Liquors:

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And here is another Mystery still, that one *Acid* is dissolved by, and coagulated with another. But the truth of the matter spoils all your discovery, which is that Steel by all tryals is found to be an *Alkali*, fermenting with, and absorbing *Acids*, and certainly hindring them where ever they go together with it from having the effects of *Acids*. And a far better reason of the good effects of Steel, where it is found a beneficial Remedy, is that as an *Alkali*, it absorbs the *Acids* in the Stomach and Bowels, and so hinders them from doing mischief, either there, or in any farther recesses, passing any way into the Blood, or urinary Vessels, sheathing their offensive points, carries them off with itself among the Excrements of the Belly. But farther, to shew how repugnant your fancies are to reason, and themselves, you shall suppose your Urinary Vessels from the Stomach to the Kidneys, and that *Acids* have the power of attenuating things, and passing that way: Then according to your Doctrine we can't suppose them to take any other course, this being the readiest way, and how freely soever you give your *Acid* Medicines, they will be still preternatural *Acids* in the Stomach, (and wo be to the Gouty, they use but little Exercise) and you can never hope to do any thing in the Blood with them, they passing all off by Urine, with the attenuated nutritive Juice, and leave occasion for Atrophies, and all Diseases you suppose coming from the abounding of *Alkalies*, and want of *Acids* in the Blood, unless Nature knows your *Acids* from others, or that they are embodied, as you say, by Steel, or some other *Alkali*, and then in truth *actum est de Acido*; since there is no fire in the Blood, (if those *Vitriols* or other embodied *Acids* ever come there) capable to distil Oyl of *Vitriol* or separate the *Acid* from those other *Alkalies* it is embodied with. But if some part of your *Acid* should scape falling through the holes at the bottom of the Stomach, and run along for company uncoagulated into the Guts, there will still be a difficulty for it to pass into the Lacteals from the Bile, if it be not defective, or the *Acid* too much in quantity: This guard falling forth into the small Guts, being the most *Alkalous* Liquor of the whole Body, and most necessary for its health, opposing the entrance of *Acids* into the Animal Palace, entangling them, and thrusting them out with the Excrements at the back-door.

Ac. The Bile is an Excrement, and seems to be as genuine an Excrement of Fire as any thing whatsoever, both from its burnt Taste, Colour, &c. and I am sure if it be detain'd in the Body will play the Devil.

Alk. I am sure it will play the Devil, if it be detain'd in the Body, and I am sure it will play the Devil, if it be detain'd in the Body, and I am sure it will play the Devil, if it be detain'd in the Body.

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Alk. If by Excrement you mean only a matter separated from the Blood, we acknowledg it may be call'd an Excrement, and so may the *Saliva*, the *Mucus* that lines the passages of the Nose, and *Larynx*; yea the *Succus Nervosus*, & *Semen*; but if by Excrement, you mean something separated, and rejected as useless to the Body, merely to be cast out, as the Dung, and Urine are; I deny the Gall to be an Excrement, any more than the *Saliva*, *Mucus*, *Succus Nervosus*, & *Semen*, all which have their special and proper ends towards the conservation, or propagation of the Body. That the Gall cannot be rationally supposed to be an Excrement in the proper sense, is apparent from the manner and way of its separation. The Liver the largest Bowel in the Body, having no other assignable use, but the secretion of this Liquor, which is ejected most commonly into the *Duodenum*, rarely into the *Jejunum*, and there mixed with the Chyle, as all that are skill'd in the Anatomy of the Solid Parts know. But it cannot well be thought, that a meer Excrement should be thus discharged into the bosome of the nutritious Juice, being the most *Alkalous* matter in the whole Body, and so according to Mr. *Acid*, the most Pernicious: But on the contrary, this Liquor discharg'd into the Chyle, so soon after its egress from the Stomach, is necessary there for the hinderance of too much Acidity, from passing thro' the *Lassels* into the Blood; which appears from the Consideration of the Nature of this Liquor, which by Distillation yields a volatile *Alkalous*, in the *Caput Mort.* a *Liquous-Salt* running in the Air, which I have not found in any of the Liquid, or Solid Parts of the Body besides, except the Dung, which has a fixed Salt somewhat like it, but not so strong: Whence I conclude, it has some *Acids* mix'd with it carry'd down by the Gall: With these Salts, the Gall yields also a *Fetid Oyl*, as other Animal Substances do, but the Particles of this Liquor, as mix'd together in their Natural State, make such a Compound as is presently thickned, or coagulated by *Acids*, more, or less, as the *Acid* is stronger, or weaker, into a clammy glutinous Matter, whereby the abounding *Acid* Particles, that are sometimes contain'd in the Stomach are inviscated and hamper'd, and so in great measure hindered from passing into the *Lassels* Veins. But I could never see the Gall make any such effervescency with *Acids*, as some Authors talk of; tho' I have try'd all sorts of *Acids*, and many kinds of Galls: And as it is itself coagulated by manifest *Acids*, so it hinders the temperate *Lassels* juice from being so soon coagulated; as is seen in this, that Milk into which, a few Drops of Gall are put, will stand in its due consistence un-coagulated, when Milk alone will be turn'd and fow'd: So that the proper use of the

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Gall, seems to me, to be for the attemperating the Nutritious Juice, and so in the *Duodenum*, *Jejunum* & *Ileum*, is a great friend, tho' detain'd in the Body, will play the Devil, you say. By being detain'd, I suppose, you mean not duly separated from the Blood, and discharg'd into the Chyle. To which, I answer, Its remaining in the Blood is not so bad, but its absence from the *Officine* of the Chyle, is as great an evil to the Animal Oeconomy; in which a proportionable and harmonious mixture, is that in which Health consisteth: In which, the Wisdom of the Author of Nature is seen, that all the Parts, and Particles in the *Hydraluico-pneumatical Engine*, the Body, are so order'd, that they help, and are again helped by one another; as here there's provision made for separating the Particles that make up the *Bilious Juice* e'er they abound in the Blood, and when they are Ejected, they become as useful to prevent another sort of Particles passing into the Blood, which wou'd be as hurtful there, as their detention in it wou'd be prejudicial. And there are not seen more evil Effects from the Gall's retention in the Veins, than from its absence in the Guts. *Fernelius* relates in *Pathol. Lib. 6. cap. 5.* That many Dy'd in whom no other Cause of Death appear'd, but that the Bladder of Gall was empty. And *Mohr* in *Fundam. Physiol.* pag. 168. That in three Infants that Dy'd of an *atrophy*, there was no Gall found. But that the Bile shou'd be as genuine an Excrement of Fire, as any thing, is one of Mr. *Acid's* hot Fancies. Nothing but Organical Vital Bodies, are properly said to have Excrements: But shou'd we allow him to talk of Fire's Dung, neither the yellow colour, nor bitterness of the Bile, wou'd be any Argument of its being the Excrement from Fire's Visuals, any more, than the same colour, and taste, would argue Vegetables in their Natural State, to be made after the same manner. And as for *Empyreuma*, whoever Tastes it, will find it has none. But before you had given us your Fiery Fancies, you shou'd have been sure there is a Fire in Man, and whereabouts the Kitchin is plac'd: I believe it's not in the Liver, but only in some few Hot Brains.

Ac. The Life of Man I take to be a Fire, or Flame, and all we Eat or Drink, together with the Air we draw in, to be as fuel for this Flame, and what is not proper fuel for it, is cast off as Excrements: That part of the Chyle that is fit to make Blood is made Blood, the rest confusedly mix'd with it, call'd *Serum*, is for nourishing the Parts, the Blood being howe'er all us'd for Nutrition, but is the Red Substance wherein is contain'd the *Biobrynum*, being its *Paulum*. Now I appeal to all conversant in Chymistry, whether the Excrements of the Fire, viz. Ashes and Soot, be not *Alkalies*. That our Lives are nothing but a Flame, or Fire of the same Nature with
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that commonly used, or very analogous to it, I think is plain. It's the Nature of common Fire, to consume whatever is a proper *Pabulum* or fuel for it, and to leave its Excrements behind it, which are Ashes and Soot. The Body of Man would soon be consum'd, unless supply'd with proper Food; and how could this be, and what would become of what we Eat and Drink, I can't understand; unless there were a Fire, or Flame within us to consume it. Common Fire can't subsist without Air: Is it not the same thing with the Life of Man? Let him be enclos'd in a place where Air can't come at him, he immediately Expires, as is well known to Miners. Heat and Warmth are the constant Concomitants of Fire, and that there's Heat and Warmth in the Body of Man, none, Master of his Senses, will deny. How is it possible for the Heat of our Bodies to be sustain'd, unless there were a Fire in us to do it; mere Motion, will never cause any Heat in Fluid Bodies, altho' excited never so much. There is a Maxim, *That there is no Smoke, but there's some Fire.* Every Body must be sensible what vast quantities of Steams are continually discharg'd from all parts of our Bodies: How this can be, unless from some Fire within us, I can't understand. And I have the Concurrence of some of the greatest Men the World has afforded, that the Life of Man is a Flame. The *Phosphorus*, which is as much Fire as any thing we know, is a true Animal Fire, to be Extracted from all Animal Substances; and if it did not actually exist in them, how can it be Extracted from them I know not: It is an *Acid Sulphurous Substance*, and the *Pabulum* of Animal Fires, is a Sulphurous *Acid*: Common Sulphur, Tallow, Pitch, do abound with Sulphur, & are inflammable; yet from none of these is by any known Artifice the least Phosphorus, or any thing like it attainable. Upon the stroaking of Cars in the dark, flashes of fire will follow. This gentle stroaking can never cause so violent a motion, as you make Fire to be, unless it were actually in the Animal. I confess Fire is a substance constantly in motion; and a brisk motion, yet all brisk motion is not Fire: But I know several fluids the more briskly moved the colder; as a River is always colder where the Current is most swift. And which is none of the least Arguments to prove our Life is a Flame; let a Man be seized with a Fever, or any Distemper attended with a total loss of Appetite, the Fat will first be consumed, and a Corpulent Man soon brought to a Skeleton, when the evacuations of Urine and Stool are less than in Health: Which could not be, unless there were a Flame to cause that Consumption. There is a difference in some respects between Animal and Culinary Fire, in many they agree. Neither will burn without due access of Air; both cause warmth: Neither can subsist without a supply of Sulphurous *Acid* Particles,

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but Animal Fire (so I call *Phosphorus*) immerg'd in Water, and taken out will retain its properties without being applied to other enkindled Bodies: This common Fire will not do. Now where ever there is a Fire or Flame, especially when supplied with gross matter; there must be a throwing off of Excrements: The *Alkali* found in Animals is the Excrement of their Fire, and all the Excrements of Animals are *Alkalous*. As for the Blood, the Volatile *Alkali* to be obtain'd from it is only the Excrementitious part of it, or rather of the vital Flame, or of its *Pabulum*, in a way of being carried off by some of the Emunctories, which if it chance to be obstructed in its passage affects the Body with some Distemper or other.

Al. The substance of your whole Doctrine seems to lie scattered in what you have here asserted. That the Life is a real Fire of the same, or very like Nature with common Fire, to the conservation of which, there is required a Fuel which whatever we eat or drink, and the Air we breath in supplieth; in which Sulphurous Acid Particles are the proper Food, which are contain'd in the red part of the Blood, but what is not proper Fuel for this Flame is rejected as Excrement, and this Excrement is the *Alkali*; which if not carried off, is the cause of Diseases. I shall oppose in the first place, to your great Men you say concur with you, (I say rather from whom you borrowed the fancy) what your Elder Brother *Etmuller* saies (who I'm sure had a double yea treble Portion of Learning to what you have) *De abstracto respirationis negotio, Cap. X. Veterum enim quem in corde fixerunt Igniculus ac flammula sanioribus Medicis, ac Philosophis dudum expirasse visa sunt, si modo unquam arserint. Ideoque ut ad illa quid regeramus opera pretium non est. Hand equidem ignoro præclaros quosdam Cartesianos Willisium, Sylvium, ejusque cultores levi admissa mutatione igniculum huncce e cineribus resuscitasse, docendo illum potissimum in dextro cordis ventriculo vigere, &c. Plausibilis præ ceteris rem proposuit clar: Sylvius Disput. med. 6ta & 7ma in quibus Scriptis Incendium illud in corde vitale uti vocat, ex bilis lixivie, cum sanguine adscendentis cordique adveſta, nec non lymphæ & Chyli subacidorum mixturæ, in dextro cordis ventriculo effervescencia, ne speciose magis quam vere, verior deducit, &c. sed paucis respondeo Hypothesin illam præsertim de bilis accensu, vigorem rationum, & experimentorum Diemerbroecii personati illius Leonisani, atque Malpighii haud quaquam ferre, Ideoque nec pro adstruendo Igniculo concludete. Moreover, I say, those great Men, and you, should have had some certain notion of Fire, and first have told us what it is. For to tell us that the Life of Man is a Fire, and not tell us what Fire is, is all one, as to tell us, That the Life of Man is a something, you*

find it out know

know not what. But that this something, may not continue like the Philosopher's undetermin'd Matter, and so all that is said remain uncertain; let us consider, what it is that is properly call'd Fire. I say therefore, 1st. That Fire is something in Bodily Nature, 2^{dly}. That Bodily Nature, is nothing but Matter consisting of Particles of all Figures and Sizes. 3^{dly}. These Particles, as they have different Figures and Sizes, are capable of different degrees and manners of Motion. 4^{thly}. That all the different Ideas, or Perceptions we have of Bodies, are caused by means of the different Figures, and Motions of the Particles. 5th. That there is no sort of Particles, of what Figure, or Size soever, that merely on that account of Figure and Size, can Properly be call'd Fire; so that the old Notion of Fire's being an Element of any thing, is false. 6th. But to the Being of Fire, there's requir'd a certain degree and manner of Motion, of such Particles, that as to Figure and Size, are capable thereof. 7th. That these Particles, must have such a degree and manner of Motion, as to produce on our Bodies, the two Sensations of Light, if not at too great a distance, and Heat, if no hindering Medium interpose. 8th. To the production of which Sensations, a certain quantity of Matter, fit for such Motion, and actually so mov'd, is requisite to come together. 9. That those Particles are more readily excited to, and longer continued in this degree and manner of Motion, in some Bodies, commonly call'd Fewel, than in others. 10th. That they more or less separate the Parts, or spoil the Form of such Bodies. 11th. To assert positively this, or that to be the particular Size and Figure, or determinate degree and manner of Motion, of Fire making Particles, would be too great a presumption, because they are too small to be Objects of Sight; yet we may suppose them rigid and inflexible Particles, mov'd most briskly to and fro, because they break and separate many Compounds, and when apply'd too near our Bodies, occasion the most displeasing Sensation of Burning; but at a convenient distance, please us by justling against us more smooth and flexible Bodies. These Propositions if well consider'd, I think, may give us some determinate Notion of Fire: There's never any Fire, but where there is a brisk Motion; and you grant me, that all brisk Motion is not Fire, but such a Motion as I have describ'd; and no other that I know of, will determine the matter so, as that we may not say, every Motion is Fire, or no motion is Fire. Now Fire, as I have said, being a congeries of a quantity of subtil, rigid and inflexible Parts so mov'd, as to cause the sensations of Heat and Light, and if too near the Body that of Burning, there can be no such thing found in the Body of Man. But let us consider your own Arguments, you use to per-

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swade us of the Existence of a Fire, or Flame in the Blood. The Nature of common Fire, say you, is to consume its proper *Pabulum*, or Fewel, and to leave Ashes and Soot as its Excrements, which you appeal to Chymists are *Alkalies*. The Body of Man would be consumed, unless supply'd with proper Food (fewer you mean for the Fire) and how this could be, and what should become of all we Eat and Daink, unless there were a Fire in us to consume it, you don't know, and the *Alkali* found in Animals, is the Excrement of their Fire. I answer, that change wrought upon combustible Bodies by Fire, and what alteration is made on our Food in the Body, is vastly different, and neither is a consumption in the vulgar sense, nor one Particle of Matter being to be rationally thought to be destroy'd. But real Fire by a violent Motion separates the Parts of many compound Bodies, both the combustible and incombustible ones. Those Bodies we call combustible, abound more or less, with Oily Parts, which are as it were the *Vehicle* of the *Igneous*: But there are few of those Bodies but are compounded of other kinds of Parts, besides *Oleous*, which in the hurry are separated from one another, and not only so, but sometimes alter'd, either broken into smaler Parts, or by striking together, are connected one with an other otherwise than they were in the natural compound; whence new resulting Bodies, or artificial compounds arise, such as Soot, and fix'd *Alkalies*, being separable again. Now which of these separated Bodies, should rather be call'd an Excrement (if the fancy of calling any of them so must be allow'd) is merely Arbitrary: In most of them Water is the greatest quantity, of that which is cast out as most unfit for the continuance of this hurry, and so might rather be call'd the Excrement. The *Acid* and Volatile *Alkalious* Bodies are carry'd off next, and the Oyl it self, tho' commonly alter'd, is most of it separated before the Fire goes quite out; the fix'd *Alkali*, and those portions of Oyl, and *Acid*, that stick in it to make it such, abiding in the Earth last with the *Igneous* particles. Now whatever, is done here, is done by a violent separation, and sticking together of the Parts of Matter. But what alterations of things are made in the Body, are made by the gentle Motions of Natural ferments, and separations by peculiar Strainers of the curiously compos'd Organical Frame, wherein there's no such degree and manner of Motion, as can properly be call'd Fire. As for the Consumption of the Body, you say, would soon be, if there were not a supply by Food; I answer, The forbearance of Food, would not consume the Body, but the Organical Frame of it, yea, and Blood, both containing a great quantity of Oyl, will re,
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main unconsum'd in Sight of Hunger. And the Fat, which you say, is first consum'd in Feavers and Diseases where there's a total loss of Appetite is carry'd off, not because it is combustible, and so Burnt away; but because its apt to be attenuated, and does not so firmly adhere as other Parts. The Evacuations by Stool and Urine, must needs be little, when the Appetite is lost, and little Eat: But at all times, its well known, the Evacuations by the Pores, are the greatest. And as for what we Eat and Drink, tho' you can't tell what should become of it, if there were not a Fire to consume it: Yet any one that is led more by Consideration and Experiment, than Fancy, may as easily give an account of the waste of it, as of wearing out a Coat, or a pair of Shooes, without supposing some Fire or other that Burns them to pieces. The Food is first somewhat separated by Chewing, then in the Stomach by a gentle Heat, and Motion, and probably by some sort of Fermentation; the things we Eat, most of them being capable thereof, if kept in a moderate Heat, and sufficient Moisture, even out of the Body: Then in the small Guts there is a separation made, and great part is carry'd down, and rejected as Excrements, which Coals, (if you please,) you may catch as hot as ever they were without Burning your Fingers. That part that is not thus rejected is *Percolated* into the *Lacteal Veins*, which convey it into the *Ductus Chyliferus*, and so into the Blood, for the nourishing the Parts, both Liquid and Solid; the *Serous* part being but the *Vehicle* for the more solid, and the *Globules* of the Blood, whilst a Man grows, the different Particles of this Nutritive-Juice, as they are fit some for one thing, some for another, adhere, and are added to the Parts of the Body, and so encrease its Bulk; those Parts that are more thin, and fluid, add to and increase the Liquors of the Body, out of which, great part is separated by Urine. When a Man has done growing, there is no need of addition, but only of a supply of as much as dayly wastes, which considering the Poreousness of the Body in all Parts, and the continual natural, and voluntary Motions thereof, for the several Works of Life, can't easily be suppos'd to be little, tho' we can find no *Focus* for a Fire, to consume us. It's very well known that Labouring Men, and that in Cold-Weather, have better Stomachs, and Eat more, than those that live Idly, tho' kept hotter than the Laborious; which may well be thought to proceed from their using more Motion, whereby the Particles of Food are carry'd about, more swiftly and at length work'd out, and this all done merely by rubbing, where there is no Fire, which you say, rejects as Excrements Soot and Ashes, the one of which may be farther separated into Volatile Salt, and Oyl, the other into Earth and fix'd *Alkali*, either of

which you may call an Excrement. of the other, as you love or hate, this or that: But you are fallen out with *Alkali*, as *Mercurium humanum*, offends your squeemish stomach, ere, *Alkali Mercurii*, *Alkali* is the Excrement. Which I think as good a Reason as any you have given. But yet whatever analogy may be in the consumption of combustibles by common Fire, and of our Food by any thing in the Body, there is this vast difference: In this there is no Soot nor Ashes made of what we eat and Drink, much less of the Air. The other Fewel as you call it, which we breathe in. Here neither the Flame, nor the Coal will burn, nor enkindle the most combustible Matter, or give you any heat. And tho' a Volatile *Alkali* and an Oyl, something like what may be got from Soot, may be separated from the Liquid, or Solid Parts of the Body, they must first be wrought upon by a common and greater Fire, than any is in the Blood. And tho' from the Gall, and Dung may also be separated a small quantity of fix'd Salt, they must first be expos'd to a real and violent Fire, and so must the other Parts, before there can be produc'd any thing that may be call'd Ashes from them. Common Fire, you say, can't subsist without Air, and the like you affirm of the Life of Man; so they must be both Fires. I answer, Tho' both require Air; yet not for the same Reason. The Air is an Elastic or Springy Body, capable of being expanded, or contracted, and in its Expansion by Heat, or the Motion of the *Igneous* Particles (which begins when ever a quantity of them, sufficient to produce the Effect can be connected) I say in its expansion, or the receding of its Parts from the place where the Fire is begun, it carries off the Particles of the combustible Matter, that are separated, and become no longer combustible, and so there's more room for the *Igneous* Particles to move on; as is evidently seen in Chymical Furnaces, where the strength of the Fire, depends on the quick carrying off the Smoak, which is done by a stream of Air passing thro' the Bodies in combustion, and carrying off those Particles that would hinder the Motion of the *Igneous* Bodies. The Air where the Fire is being rarify'd, that below being more compress'd, expands it self into the place where is most room, and other Air succeeds it, (the Air being more dilated the higher it is) the more compress'd Air still passing that way; so still the stronger the Fire, the stronger the Draught of Air, and the faster the separated Parts that would hinder the motion of the *Igneous* Bodies are removed. But the Life of Man requires Air, not to blow a Fire, carry off Soot, or displace Ashes, much less as a Fewel for a Fire; but besides many other Ends and Uses, chiefly to continue and carry on the Circulation of the Blood; Which I take to be done

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after this manner. The Air by its Elastick Property, rushing into the Lungs upon the dilation of the Thorax, expands them, and thereby sets the *Sanguiferous* Vessels free and right for the passage of the Blood out of the Right Ventricle of the Heart into the *Vena Arteriosa*, at the Rise of which, there are Valves to hinder its passage back again; and the Vessel and the *Arteria venosa* by their *Anastomoses* being fill'd with Blood, the Thorax is again contracted, the Air pressed out, and the Lungs fall together; whereby the Blood-Vessels are pressed: But the foresaid Valves hindring its going back, it is drove into the Left Ventricle of the Heart, whence it cannot return into the Lungs, by reason other Valves hindring it; the Thorax being again dilated, and the Lungs by the Air rushing in expanded, and the Vessels, whose Blood was pressed out into the Left Ventricle of the Heart, again free; the Blood flows into them again from the Right Ventricle, by which filling and emptying of the Vessels of the Lungs, the Blood is as it were pump'd and carried along in its Circulation: And is there as it were ground, its adhering Globules separated, and divided from one another, its Heterogeneous Particles more exactly mix'd, and so is attenuated, and made more capable of passing the smallest Vessels thro' the whole Body. So that the principal reason, why a Man can't live long without Air, is because the Blood can't otherwise circulate through the Lungs which way it must go; which evidently appears from the consideration of a Child unborn, who lives several Months without respiration, the Blood being carried on by the force of the Circulation of the Mothers Blood through the *Foramen Ovale*, from the Right to the Left Ventricle of the Heart; which is stop'd when the Child is born, and becomes a distinct, and separate Animal, needing a force of its own to carry on the Circulation. The reason why Persons are often kill'd in Mines, is not because there is no Air, it being impossible almost to keep it out, but that they sometimes breath in with the Air Arsenical, Sulphurous, or other noxious Fumes, of which one would think a *Professor of Chymistry* could not be ignorant: But you may soon try; the Fumes of *Antimony*, *Arsnick*, or the beloved *venomous Acid*, steaming from enkindled Brimstone drawn into the Lungs, will in a little time be found no good Fuel for your proposed *Biolychnium*. As to your Argument from Heat and Warmth the concomitants of Fire, and in the Body of Man. I Answer, Heat is most certainly the concomitant of Fire, and also brisk Motion, but as you confess all brisk Motion is not Fire; so I say, all Heat and Warmth is not Fire, and the briskest Motion in the Body of Man, either in Health or Sicknes, is not brisk enough to make a real Fire in the weakest degree. And tho' you can't see how Heat

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and Warmth could be sustain'd without a Fire; you may as well say, you can't see how a Man can walk unless he be running. Warmth, Heat, and Fire it self, is nothing but meer Motion in several degrees and manners, and wherever there is motion there is some degree of Warmth, tho' we may not perceive it, for there is no such thing as absolute cold unless where all things are in absolute rest, which place would be hard to find. Whatever Heat, or Warmth is caused in Fluids, is caused by mere Motion, even where they are set over a Fire, but the nature of watry Bodies, such as the Liquors in Man, will not admit a real Fire or Flame to be mixed with, and continue in them; and tho' by Motion they may be brought to a Heat inconsistent with the Life of the Body; yet this very Motion is not Fire. But doubtless the Heat in Man's Body is caused by some kind of Motion, and probably a fermentative one; the Blood and other Liquors containing divers salts and Oily particles may well be thought so to move together, as to cause the greatest Heat in the Body of Man. I confess a meer Oyl, and some very strong Acid Spirits, will by their mixture be enkindled into a real Flame, but there never is nor can be such a mixture flow in the Veins of a living Man; so there is never Heat enough to enkindle the most inflammable Bodies. You may take *Phosphorus* without any fear of its being set on fire in your Belly, which tho' as little Heat would enkindle, yet not immerg'd in a watry Liquor, or without the sufficient access of Air; for which very reason there can be no Fire in the Blood. And *Phosphorus* it self, tho' so apt to be enkindled, I have known lie for a Month, and might have done as long as one would, in a Glass seal'd up without any Water, or the Air excluded, and not at all take Fire. The continuance of our Heat is very easily conceived to be by a continual supply of *Saline* and *Oleous Particles* apt to jostle against one another in a watry Liquor, and move sufficiently to keep us warm. We know that divers Liquors mix'd together, will cause a Heat, even where there is nothing inflammable in either of them. It has been found by experience that the heat of hot Springs proceeds from a certain Bed of Salts of divers natures, which the Water coming to the surface, and so their Motion produces the Heat, something like that produced by pouring Water upon Lime, which I think no Man in his Wits can ascribe to a Fire or Flame in the Water. That you say some Fluids the brisker moved are the colder, is your mistake; that a River is not coldest in the current appears from this, that the Current is not so soon froze; and tho' the wind by its motion causes the sense of cold, yet it is not merely by its Motion, but because the Particles moving straight on in a
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line hinder the hurrying Motion, which is the formal cause of heat, of the Sun Beams, which luminous Particles while dispers'd and sepearate have not force enough to cause the effect of Fire, or burning; yet when collected, and bundled up in the *Focus* of a Burning-glass, are in a posture to cause that sensation, when an Inch distant from the *Focus* they have not such an united force. As to your maxim, *There is no Smoak but there is some Fire*, I answer, the steams of our Bodies are not Smoak, nor if you could catch them, would they have a Grain of Soot, but are very little besides Water, as I could shew any body by a method whereby one may collect, Four, Five, Six, Seven, Eight Ounces, or more of Sweat from a Man at any time: And Water we all know is rarified, and carried up by a very small heat, as is seen in the coldest Weather, and the Water rarified by the Sun, will appear somewhat like smoak. As for the *Phosphorus*, it is not an Animal Fire, or any Fire at all till enkindled; when set on fire nothing burns fiercer, or burns out sooner, otherwise it is but a very inflammable Sulphur, or Fuel apt to take fire, being not so much as sensibly warm till enkindled. And to the difference you fancy between this Animal Fire, as you call it, and the common: I Answer, *Phosphorus* will not have the properties of Fire after immersion, or before, unless its Particles are excited by sufficient Motion; and so will other Combustible Bodies be enkindled by sufficient Motion after Immersion, yea some incombustible Bodies as a Flint, and a Steel by a brisk Friction will give fire, or a piece of Iron by vigorous hammering light a Match, never the less for being immergd. But Mr. *Acid*, were his *Biolychnium* under Water but one Week would never burn again, without a miracle, or the application of some enkindled matter. Farther, *Phosphorus* may easily be supposed to be extracted from Animal Substances without being thought to be actually in them, and tho' I grant that it was materially in them, I deny that it was formally: For the Particles that compose this Artificial Compound were dispers'd, and mix'd with others, and so compos'd no such Body, but are brought together by Art, and stuck to one another, and then are in that state call'd *Phosphorus*, and may be separated again as easily, and then are not *Phosphorus*. As Glass of *Antimony*, or Lead was not really Glass in those Bodies before the Operation of the Fire, but made by it, and they may be reduced again to *Antimony*, and Lead, as they were before, and then are no Glass. Yea some products of Art were not so much as materially, as to their whole, in the matter wrought upon by the Fire, as *Zink* Lead, and some other Bodies some way operated on without any addition, will not only give Bodies of quite another form, but will

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be increased in weight considerably. *Phosphorus* is an *Acido-Sulphurous* Substance you say, I say rather an *Acido-oleous*; for *Sulphur* is a Body compounded of an *Acid*, and an *Oyl*, and to say *Acido-Sulphurous* is allone, as to say, *Acido Acido-Oleous*. And if the *Pabulum* of Animal Fires were a *Sulphurous Acid*, and *Phosphorus* a *Sulphurous Acid*, it will follow only, that *Phosphorus* may be a *Pabulum* for Animal Fires (were there any) and not the Animal Fire it self. Common *Sulphur*, *Tallow*, *Pitch*, abound with *Sulphur*, you say; That is *Sulphur* abounds with *Sulphur*, and is inflammable: A Wit! Mr. *Acid* abounds with Mr. *Acid*, and is sour; this is deep! *Tallow* and *Pitch* abound with *Brimstone* too you fancy, but I'm sure you never got any *Brimstone* from them, nor can there be any got without the Addition of an *Acid*, if then. But whether there can be any *Phosphorus* made of these? I readily yield, there cannot by any Artifice known to Mr. *Acid*, but there are very many things done by Artifice unknown to him, But you said Sir, a little before, that *Phosphorus* might be got from all Animal Substances; yet now it cannot be got from *Tallow*, &c. by any Artifice; but you forgot again, that *Tallow* is an Animal Substance; it slip'd your memory, being a greasy body. Upon stroaking of Cats in the dark, flashes of Fire will follow, you say. Your Puss perhaps may serve you to strike Fire with, but it will only prove a *Ignis fatui*, which no Wise Man would call a Fire, or think actually in the Animal as its Vital Principle, any more than the shining of a dead and stinking Whiting, or of a piece of rotten Wood can be thought their life, or a real Fire. For tho' in these there is a light; yet there is wanting the other qualification a burning Heat, as your Assertions Sir, commonly want two things, without which conjunct they cannot be more than uncertain Fancies, viz. Experiment and Reason, whereby you should have examined the Nature and Properties of Bodies, that you might not have grounded your Judgment upon false Principles.

Ac. The Principles of mix'd Bodies I take to be *Acid* and *Sulphur*, as the Vital Active ones; *Alkali* the Principle of Death, and Corruption: There being since the Fall a Principle of Death, in opposition to that of Life implanted in our Nature, and not only in our Natures, but in the Natures of every thing else for our sakes. [God said to Adam, *Cursed be the ground for thy sake*, &c. I confess, many of our Age will Laugh and Ridicule me for having recourse to Sacred Writ, especially the Writings of *Moses*, which they look upon as a kind of Romance: But let them Laugh on. If there were not a Principle of Death within us, how is it possible for Man one Hour to be in a good state of Health, and the

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the very next Expiring] Then there is Water and Earth, the two passive Principles: And from these I can more easily account for the *Phænomena* in natural Bodies, than from the five old ones, Salt, Sulphur, and Mercury, Water, and Earth, or any other Principles broach'd in the World.

Al. By Principles, I suppose, you mean the same as some others do by Elements, *viz.* Simple Bodies, of which, all Compounds are suppos'd to consist, and into which, they may at last be resolv'd. To which, I answer, That neither these Five Things you call Principles, and would have us believe New, and rather of your Invention, than of Doctor *Andre's*, nor the Five old ones (as you call them, between which and yours there is but little difference) are indeed, the Elements, or Principles of Compound Bodies, and so sufficient to solve their *Phænomena's*: Which may appear by a little Consideration. But in the first place, I shall observe, that your division of Principles into Active and Passive, is not good, or allowable any farther, than as a compliance with an improper and vulgar way of speaking: For in strict Speech, nothing can be said to do, or be Active, but what has a Will, and those Bodies by which we receive the strongest impressions on our Senses, and have thence been call'd Active, have indeed no more Will than the other, that's none at all: To be figur'd, and mov'd (which is all that belongs to Body) in what manner soever, is not to Will. As for Earth, I shall next observe, That that which you call Earth, is not that which is properly call'd the Earth: Your Earth or *Caput Mort.* being as different almost, as the Bodies in which it's found, and consequently not simple, but it self a Compound. That which is properly call'd the Earth, is the Quick-Sand, of which and Water, this Globe chiefly consists; it being the Basis of other Bodies, and seems to be a Body consisting of *Homogeneous* Particles. And as to the Water that is mov'd thro' the *interstices* of these Sands, and is found in the Pores of many Bodies, and the Air that also rusheth into all Porous Bodies, where it can have passage, and compasseth them about, they are as it were the *Vehicles* of grosser Bodies, themselves probably consisting of their peculiar similar Particles, and are not to be thought Elements of other Bodies. For instance, Wood though it is Porous, and some of its Pores hold Air, some Water; yet they are not to be call'd Elements of the Wood, any more than Water running in a Lead-Pipe, or Air within the Walls of a House, are to be call'd Elements of Lead, or of the House. The Air, and Water, I say, are the *Vehicles* of the Particles of Compound, and changeable Bodies, carrying them to and fro, in the Production of all the changes we see them undergo. But to come to your suppos'd Principles, they will appear not to be the

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Principles or Elements of Compound Bodies, from these Considerations. First, Whatever are suppos'd as Elements, or Principles of mix'd Bodies ought some way or other to be prov'd really, and actually to Exist in the Compounds as Parts of them. 2. They ought to be unchangeable, and consequently simple Bodies themselves. As to the first, I say, these Bodies you call Principles, are not, nor ever were (that we know of) prov'd so much as likely to Exist in, and make up some mix'd Bodies, or as Principles to be in any. For instance, Gold is a Body in which you cannot demonstrate, that there is one Grain of *Acid*, or Oyl, or of *Alkali-Salt*, no nor of Water, or of *Caput Mort.* so far it is from being to be thought a Compound of your Five Principles. But I remember, you have asserted, *That Gold is nothing but a pure Acid and Sulphur*, which you said, *has been made appear, by some of the most strict enquirers into Nature's Secrets.* But who those were you won't tell us: But upon this supposition, your Five Principles are excus'd here. *And the more Acid with Sulphur, any thing has, the more perfect it is*, you say. By Sulphur, I suppose, you mean an inflammable Substance, and according to this Fancy, *Brimstone* which is all *Acid* and *Sulphur*, would be as perfect as Gold, and perfect too, for I'm sure, you never saw any thing inflammable, or *Acid* in Gold. But the reason of this your Opinion, I suppose, is this, you have a very great kindness for *Acid* and *Sulphur*, and as much for Gold; therefore Gold is *Acid* and *Sulphur*. Again, you shall take *Chrystal*, *Talk*, *Diamonds*, *Pearls*, *Mercury*, *Silver*, or divers other Bodies, I might name, and your strict enquirers into Nature, Dr. *Andre*, and all to help you, shall not be able to separate any two of your Principles from them. Again, many of those Bodies from which some, or most, of those your Principles are got, may not without sufficient ground, be thought not actually to contain them such as they are produc'd, but that they are New Products, not as to Matter, but as to Form; resulting from the combinations of more simple Particles united together by the violence of the Fire. As for *Acids*, we well know, there are apparent ones, Naturally in some Bodies, Animal and Vegetable, and from others, produc'd by Art; but even from those Bodies, I can easily get an *Alkali* instead of an *Acid*; when I please, without any addition, merely by the different ways of Working. For instance, I will take a quantity of a *Green Herb*, and divide it into two parts, from one half I will get an *Acid* Liquor, from the other half a *Volatile Alkalous Salt*, merely by Distillation. So likewise, I will get a large quantity of fix'd *Alkali*, and none or very little *Volatile Alkali*, or a larger quantity of volatile *Alkali*, and little or no fix'd, which I please, from the same Herb, without any addition, merely by the different ways of Operating. From these

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these and many other Considerations of Things well known to Chymists, it's highly probable, these Bodies are rather Products made by Combinations and Alterations, than the simple Elements of Bodies. And your asserting, That if *Alkali* were the product of Fire, the *Super Mart* burns again, would produce more *Alkali*, is very weak: For the *Super Mart* has not the matter left whereof to make it. 2. Principles ought to be unchangeable, or else they cannot be supposed to be simple Bodies, but *Acid*, *Alkali*, *Oyl* are changeable. As for an *Acid*, I can change it into an *Oyl*, or into an *Alkali*. *Oyl* I can change into an *Acid*, and into *Oyl* again, or into an *Alkali*. *Alkali*, I can change into an *Acid*, and then that *Acid* into an *Alkali* again. Which things are so well known to all that deserve the name of Chymists, I need not repeat the Processes; and as for those that don't understand Chymistry, it is besides my purpose here to teach them. But as for you Mr. *Acid*, that you may think your self incapable of being Transformed into an *Alkali*-Doctor, because The making *Acids* *Alkalies*, and *Alkalies* *Acids*, is contrary to your Experience, or the producing *Alkalies* or *Acids* out of those Bodies, in which they did not Exist: I can shew you such an Experiment at any time, and then you are oblig'd upon your Word, to own your self my humble Servant. As to the Accounting for the Phenomena of Natural Bodies from *Acid*, *Sulphur*, *Alkali*, &c. they will soon appear too narrow, and insufficient (especially if we could take them for simple Bodies) to any Considerate Person that does not serve an Hypothesis. I challenge any Man for instance to give me a reason of the following Phenomena, from the mixture of any of your Principles. First in Vegetable, or Animal Poysons, how a very small quantity of matter, sometimes not the hundredth part of a Grain should have such dismal, various, and sudden effects from any mixture of *Acid*, *Alkali*, *Oyl*, &c. When these in themselves may be cool, separate, yet on conjunction, however we can buy them again in considerable quantities without any harm. What Hypothick could ever make a mixture of *Acid*, *Alkali*, *Oyl*, &c. to have the effects of *Opium*, or of a Cathartick Drugg, that I have known work so violently as to bring a Man exceeding weak, by only holding it in his Mouth a Minute or two, and so spitting it out. The same may be said of Specificks, of which Mr. *Acid* himself in a little fit of consideration, has own'd. There are many that are neither *Alkalies* nor *Acids*, yet seldom fail of curing Distempers. Should he deny the Doctrine of Specificks, says he, he should deny matter of fact, which he promises never to do, till he is totally deprived of his Reason. And gives us some Instances of the Operations of Specificks, which cannot be supposed to proceed from their being *Acids* or *Alkalies*. Another Instance wherein these Principles will be found short,

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short, is the *Phænomenon* of Magnetism. To name one thing. Take a Load-stone and rub one end of a polished Needle on the North Pole of the Stone, you will find that Point will be attracted to the same Pole when ever it is brought near it: But offer the other end of the Needle to that same Pole, it will be driven from the Stone, as much as the other tubid end is attracted: but force this end that is driven off, to the North Pole of the Stone, and keep it there some time, it will be attracted as much as it was driven away before; and the end that was first attracted will be driven away. Now here can be no conceivable alteration of the proportions of *Acid* and *Alkali*, or any other of your supposed Principles in so short a time, by the bare contact of the Needle and Load-stone, and this done amply suffices, without the least alteration of the texture of this Needle or Load-stone. Again the gravity of Gold can no way be accounted for, by supposing it compounded, howsoever of your Principles; this Metal being heavier than either of them, more than twenty to one; so that it is it from consisting of meer *Acid* and *Sulphur*, as Mr. Boyle affirms. The heaviest *Acid* commonly known being lighter than this Metal above eighteen times, and *Sulphur* not much heavier. Now it is impossible that two light Bodies should compose a heavy one. I might recite many other *Phænomena* in Bodies no way to be accounted for by these supposed Principles, as in Colours in the Rays of light in the prime and evb permanent ones, as in the forementioned Metal, which cannot receive its colour from things which on the account of their lightness, can be no Ingredients of it. I might also demand the reason of sounds, their Harmonies or Discords; but I should tempt our Hypothesick Oracles in vain. But I think I have most reason to conclude that the *Phænomena* of Bodily Nature; on the different Mixtures of these simple Bodies depend upon, or result from, far greater difference and Variety of Figures, Sizes, Textures, and Positions of the Particles of Matter, created in the beginning, of all Sorts and Sizes to us imaginable. From the Adhesions and Combinations of sometimes more; sometimes fewer of these Simple Particles, all the varieties of mixed Bodies result. Where there are Particles together, whose Figures are more or less spherical, there is a Body more or less fluid. Where the Particles inter together, and are more or less apt for motion, there is a Body more or less solid. Where are fewer of the Simple Particles, there is a Body less compounded. Where there are more sorts of differing Particles, there the Body is more compounded. Where there is a congeries of Particles of one Figure, there is a Simple Body; as probably the Particles of Air and Water may be so thin, they do not touch one another exactly,

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exactly, or rest together, and so are porous and fluid, and capable of receiving other Bodies into their Pores. And perhaps some other Bodies, whose Particles simply adhere, and so are called Solids, may also consist of similar Particles. This innumerable variety is large enough to make all the most odd properties of Bodies. The Divisions and Combinations of these Simple Particles by Art (tho perhaps seldom or never divided into Sets Similar or Simple) is that whereby all the Artificial new resisting Bodies are made. But a single Particle, let it be of what Figure or size it will, cannot be supposed capable to be divided; because it consists of pure Matter continuous, and not of Parts merely contiguous, and so there is no *Vacuum*, or room for any other Body to come in to divide it, as there is between the contiguous parts of Matter. And tho the least Particle in Nature might be supposed Mathematically or Imaginarily divisible; yet really and Physically the greatest Particle cannot be so thought; tho some inconsiderately assert a Physical infinite Divisibility. I should her leave your Principles to their Master; with these few Considerations, but that poor *Alkali* is so abused by you, there needs a word or two here to be spoken for him. And I must tell you, it is from meer spite and ill will, and no reason, that you say, he is the Principle of Death and Corruption, and created since the Fall in opposition to Life. I must oppose *Moses* to you, who tells us (and he had it written by the Finger of God) That, in six days God made Heaven and Earth, the Sea, and all that in them is. *Exod. 20. 11.* Wherein *Alkali* must needs be concluded (if it be a Creature of God) and that from every thing that he had made, and behold it was very good. *Gen. 1. 31.* Adam was flesh and bone, *Gen. 2. 23.* made within the Six Days and had no part of his Body made since; because all things were made within that term, and so must have his *Alkali* in him before the Fall, as well as it was in other things, tho not as you say in every thing else, either then, or now, which you would not have asserted had you not had a *Trigacheous* *Alkali* as I say before, and termed it to be in that incorruptible *Yellow* and *Orange* you love as well as Lemons and Oranges, which you say consists only of Acid and Sulphur, tho it is as insipid, as must be your Discomfort. And though we read, God said unto Adam, Cursed be the Ground for thy sake, yet *Gen. 3. 17.* *Gen. 3. 18.* *Gen. 3. 19.* *Gen. 3. 20.* *Gen. 3. 21.* *Gen. 3. 22.* *Gen. 3. 23.* *Gen. 3. 24.* *Gen. 3. 25.* *Gen. 3. 26.* *Gen. 3. 27.* *Gen. 3. 28.* *Gen. 3. 29.* *Gen. 3. 30.* *Gen. 3. 31.* *Gen. 3. 32.* *Gen. 3. 33.* *Gen. 3. 34.* *Gen. 3. 35.* *Gen. 3. 36.* *Gen. 3. 37.* *Gen. 3. 38.* *Gen. 3. 39.* *Gen. 3. 40.* *Gen. 3. 41.* *Gen. 3. 42.* *Gen. 3. 43.* *Gen. 3. 44.* *Gen. 3. 45.* *Gen. 3. 46.* *Gen. 3. 47.* *Gen. 3. 48.* *Gen. 3. 49.* *Gen. 3. 50.* *Gen. 3. 51.* *Gen. 3. 52.* *Gen. 3. 53.* *Gen. 3. 54.* *Gen. 3. 55.* *Gen. 3. 56.* *Gen. 3. 57.* *Gen. 3. 58.* *Gen. 3. 59.* *Gen. 3. 60.* *Gen. 3. 61.* *Gen. 3. 62.* *Gen. 3. 63.* *Gen. 3. 64.* *Gen. 3. 65.* *Gen. 3. 66.* *Gen. 3. 67.* *Gen. 3. 68.* *Gen. 3. 69.* *Gen. 3. 70.* *Gen. 3. 71.* *Gen. 3. 72.* *Gen. 3. 73.* *Gen. 3. 74.* *Gen. 3. 75.* *Gen. 3. 76.* *Gen. 3. 77.* *Gen. 3. 78.* *Gen. 3. 79.* *Gen. 3. 80.* *Gen. 3. 81.* *Gen. 3. 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trary Hypothesis. If Moses understood the Mysteries of Nature as well as any Man, and was guided by an Infallible Spirit; as Mr. Acid once said, how is it that he can see no reason to doubt of that which contradicts him. But Mr. Acid can't see how a Man can be in a good state of Health one hour, and the next expiring, without supposing a Principle of Death within us. I Answer, his Memory is treacherous; one while he says, All Persons have some degree of Sickness: Now he talks of Persons being in a good state of Health: At another time, When he considers the Structure of our Bodies, of what multitudes of minute Parts they are composed, instead of being surprized at our being sick so often, he is almost amazed to think that we are ever well. So say I, Man's Body is a delicate piece of Mechanism, consisting of a multitude of small and tender Vessels, bound up in a thin porous Skin, consisting mostly of soft and tender Matter: Man's Mind is a foolish and violent Agent, oft forcing this curious Engine to that it is not strong enough for; and it is no wonder to see a Man now well, and anon expiring by the excess of Eating and Drinking of the Passions of the Mind, or other Forces upon Nature, which doubtless would have destroy'd even Adam in Innocency, could they have been, where was no culpable defect in Wisdom and Goodness, without supposing a Principle of Death. As Christ himself in whom there was no Sin, was found capable of Bodily Miseries, and a Violent Death. Swords and Pistols, and other the inventions of Man's Cruelty, are not the only things, whereby a Man's Life may be destroy'd in a short time, but the most innocent and wholesome Food abused, and taken in excess, even Bread, in which some reckon so much Acid, will soon do the business. As I once knew a Woman by eating Bread very freely, got such a Distemper, that broke out in large Boils in many parts of her Body hardly escaping with Life. And I think I may affirm, that where one Person dies by the abuse of the Creature Alkali, there are ten that lose their Lives by your beloved Principles Acid and Sulphur, or Oyl, in the one instance of excessive, and unreasonable drinking of Vinous Liquors. And I believe no Man of any considerable Reason and Experience, but by Observation may find, that tho' Acid and Alkali are both good Creatures, ordain'd for their proper Uses and Benefits to Man; yet Acid things in their abuse are more frequently, and strongly pernicious to the Vital Oeconomy.

Ac. Acids hinder Putrefaction, and reduce things from Putrefaction, already Purify'd, and so must be great Medicines: For there's no Disease but proceeds from some sort of Putrefaction of the Fluid Parts of our Bodies. Acids every Body knows, preserve
Animal

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Animal Substances from Corruption and Stench; and if Dead Bodies were full of *Acids*, it is difficult to conceive how they could so soon Putrefie; nay, it were impossible they shoud. For *Acids* can't undergo Putrefaction. And the more perfect, and durable any Vegetable is, the greater quantity of *Acidum* and *Sulphur*, it affords, and the less of excrementitious *Alkali*: *Alkalies* presently cause Rottenness and Putrefaction in Animal Substances, as may be seen in making of Glovers Leather: Mr. Yardly a Glover of Worcester, the most Ingenious Man, perhaps, that ever was of his Trade, he being (which is very strange for a Man of so Mechanick a mean Trade) a curious Philosopher; tells me, that in making Leather, they first throw their Skins into a Pit fill'd with a strong *alkalious liquor*, which makes them in a manner Rotten: After they make a strong *Acid* Solution, into which they throw their almost rotten Skins, which again reduces them to their Texture; nay, makes them firmer than they were at first. From whence it may be naturally infer'd, that *Alkalies* break the Texture, and destroy the parts of Animal Substances, and moderate *Acids* preserve them, and restore them to their Tone and Texture, when they are before spoiled by *Alkalies*. Nay, *Alkali* is the only destroyer of all Bodies, and what brings them to a state of Putrefaction and Corruption. Again, *Acids* suppress Fermentation. *Alkalies* excite Fermentation, in fermentable Liquors, as is too well known by the Brewers of this Town: *Alkalies* are the cause of all Præternatural-Heats in the Body. *Acerum* is good in Inflammations, *Erysipelas*, &c. And *Acids* are the only things that quench Thirst. Oyl of *Vitriol* is one of the best Medicines known, in continual Feavers. *Acids* are the most Effectual things in the World to ease Pains, and if Pain be caused by *Acids*, it is by giving them in too small a quantity. *Sat Alkali* is Caustick, and burns the Skin. Inwardly given without being diluted with an *Aqueous* Vehicle causes Vomiting, and depraves the Appetite and destroys it, *Alkalies* conveyed into the Blood, by breaking its Globules, and destroying its Texture, cause *Scorbutes*, *Rhumatismes*, *Scratice's*, *Consumptions*, *Gouts*, *Palsies*, or some other Chronical Diseases. An Ingenious Person, not long since, who had formerly embraced the Doctrine of *Acids*, was willing to try what Effects the Transfusion of *Acid* and *Alkalous* Liquors into the Veins of a Dog would produce: And the Oyl of *Sulphur* injected into the Veins of one Dog, made him brisk and lively, and hungry, instead of disordering him, Oyl of *Tartar* on the contrary, injected into another Dog's Veins, made him dull, and in a few Days he dyed,

Al.

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Al. How *Acids* hinder Putrefaction in Animal Substances, any one may see by easie Experiments; Oyl of *Vitriol*, or Spirit of *Nitre*. pour'd upon the red part of Blood, presently turns it into a black Corruption, and the *Serum* into a white purulent Matter: So Leather, Bladder, Flesh, Tendons, Skin, have their Texture destroy'd by these *Acids*, and are Rotted and turn'd into a purulent Matter; yea, the very Bones are dissolv'd by *Acid* Liquors: So far are *Acids* from hindering the dissolution of the Texture of Animal Substances; much less will they do the Miracle of reducing things already Putrefy'd, from Putrefaction, and so, being such great Medicines. And as inconsiderate, have you shewn your self Mr. *Acid*, in asserting all Diseases to proceed from some sort of Putrefaction of the Fluids of our Bodies: For if there be ever any such thing as Putrefaction in the Juices of the Body, it can't be reckon'd the Cause from whence a Disease proceeds; but the Effect or Product of the Disease: But there are many Diseases, where there has not been one Rational Argument, or certain Experiment given to perswade a Putrefaction of Humours, properly so call'd, so much as an Effect. The difficulty of conceiving Dead Bodies impossible to be Putrefy'd, if full of *Acids*; is only to Mr. *Acid*: Others know very well, that even those Animals that abound so much with *Acid*, that in Distillation, they will yield one half of their weight of a strong *Acid* Liquor, will notwithstanding Putrefie, and that as soon, or sooner, than some others abounding with *Alkali*. And that a Man's Body may be kept without Putrefaction, or Stench a Thousand Years, without the help of *Acids*: Yea, *Alkalies* themselves, we know, are great Preservatives of Flesh and Blood, if used in due quantity, from Corruption and Stench: As the Honourable Mr. *Boyle* tells you, in his Book *Of Humane Blood*, pag. 142. Where twelve Drachms of Blood, were put up with two Drachms of Spirit of Blood, and was thereby preserv'd a Year, of a florid colour, almost totally Fluid, had no ill Scent, or any sign of Putrefaction, and it would no doubt, have preserv'd it much longer. In which Book, he also gives an account, of divers considerable good Effects of the use of the Spirit of Humane Blood, as a Medicine, inwardly and outwardly, in instances too long here to be recited; and tells you, pag. 206. That Volatile *Alkalies* in general, had been profperously used in Physick in *England*, since the Year 1656. about which time, he had the good Fortune, to contribute so to introduce them, as to bring them by degrees into request, and sees small cause to doubt, but that they would be more generally esteem'd, and employ'd. The Judgment of which every way Learned Person, can hardly be oppos'd to a young *Medicaster*,

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without diminishing him. The truth of whose Narratives, in matters of Fact, known to him, are beyond question, to any that knew him, as I not only well did, but was either an Assistant, or Beholder in the making those Experiments, that are the substance of that Useful Book of *Humane Blood*. To this may be added, the method of Preserving Dead Bodies of Dr. *Gabriel Clauder*, recited in the *Memorials for the Ingenious*, Oct. 30. 1882. Which is with a *Lixivium* of Oak Ashes, and *Sal armoniack*, in which, both a fix'd and volatile *Alkali*, are conjoin'd, and found to go beyond most former Methods of Embalming. And tho' *Acid* Salts and Spirits won't undergo a proper Putrefaction; yet Vegetables, that yield most of *Acid*, and Oyl in Distillation, will Rot as soon, or sooner than some others: Yea, Crabbs, Oranges, and Lemons, every Boy knows, will Rot sooner than some Apples that are not sour, and many of those Vegetables that yield most *Acid*, by burning will yield the greatest quantity of fix'd *Alkali*; which Product, is as far from being capable of Putrefaction as any *Acid*, or of Rotting the Coal in which it lies; tho' it has lost the suppos'd preserving *Acid*. But the chief ground of your Belief, that *Alkalies* will presently Rot and Putrefie Animal Substances; I find, is a story you heard (but could not well remember) from your curious Philosopher and Country-Man, Mr. *Tardly* the Glover of *Worcester*, who may be a good Glover, for ought I know; but I'm sure, you have not learn'd Dressing of Leather of him (whether it be his fault or yours) any better than you did *Pharmacy* of your Master the Apothecary. As for Philosophy, whether the Glover or you be the Master, I know not, but probably he might teach you the Four Years, you out-did the Apothecary; but I believe you are both Philosophers of the same Pitch. But as to Leather-Dressing, the strong *Lixivium* you talk of (to help your Memory) I tell you is *Lime*, which is not used to Rot the Skins, in order to make them the stronger (the Glover knows better) but to get off the Wool, or Hair. And tho' by letting the Skins lie in the Lime-Pit too long, they may possibly be spoiled beyond the recovery of all the *Acids* in the World; yet we all know, that Lime-Water is but a mild *Alkali*, and a Medicine of great use in Chirurgery, and is so far from having any caustick, or violent Effect, on Living Bodies; that it may be safely, and to good purpose used even in *Ophthalmicks*, being a mild Remedy not so much as making the Eye, that most sensible Part, to smart; and not only so, but may be used to good purpose inwardly in some Distempers, without any fear of rotting one's Belly, or making Leather of it; tho' you give an *Acid* afterwards. But what you take for the *Acid* Solution, I am not certain, whether the infusion of Bran they use, or the

Allum-

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Allum-Water. The first we know becomes very sour, and if the Skins lie in it too long, will indeed rot and spoil them beyond recovery; but the *Allum* is not an *Acid*, as you may find by its turning the Syrup of *Violets* Green, which it will soon do; nor has it any of the Effects of an *Acid*: For tho' an *Acid* Spirit may be Distill'd from it, there's no such heat in Dressing of Leather, as can separate the *Acid* from the Chalkey Substance, with which it is already saturated, and made incapable of having any operation as an *Acid* upon the Skins. But *Allum* is used in making of Leather, on the account of its Astringency to make the Skins more compact; and the *Acid* before used, is wash'd out, and not left in the Leather as a Preservative against Corruption, which every Body may easily try, and see soon brought upon Leather, by even a mild *Acid*; so far is your Inference from being Rational, or grounded upon Experiment, That *Alkalies* break and destroy Animal Substances: But *Acids* do the Miracles of reducing them when rotted and spoil'd, *a privatione ad habitum*, or from Rottenness to Integrity. And let me ask you here Mr. *Acid*, if you are *Mentis compos*, if all *Alkalies* break the Texture, and destroy the Parts of Animal Substances; How does the Bladder, the Veins, the *Vesica Fellea*, &c. hold out forty, fifty, sixty, seventy Years, against this Corrupter in Sicknes, and in Health, and come to be found strong, and entire after Death? And how do the Bones that have no *Acid*, but abound with *Alkali*, remain so firm, and entire; when the Coffins made of Oak, or the more resinous Fir with all their *Acids* and Oyl, are rotten and consum'd? But what follows, That *Alkali* is the onely Destroyer of all Bodies, and that which brings them to a State of Putrefaction, and Corruption, is so Extravagant, one might suspect you delirious; but I would ask you, if out of your Paroxysme, did you ever see Gold, Silver, Stones, Sand, to which *Alkali* is strictly bound in *Glass*, *Mercury*, and a Thousand other Bodies I might name, destroy'd and brought to a State of Putrefaction by *Alkalies*? Could you prove your Words, you would persuade us, that *Alkali* is the universal Dissolvent, and that Fire destroyeth nothing. Well but another mischief of *Alkali* is it excites Fermentation in fermentable-Liquors: I tell you 'tis well it will do so, and that the Brewers know it; for we should have but bad Drink without Fermentation: But I know, you are no Master-Brewer, any more than a Master in Leather-Dressing; if you were, you would know, you could have no Vinegar without Fermentation, and that no Liquors can Ferment, but those wherein are Materially both *Alkali* and *Acid*, and that all Fermentable Liquors, at length turn *Acid*. *Alkalies* again, say you, are the cause of all Praternatural Heats; I answer, not till they meet with *Acids*, which may as well be

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said, to be the cause of the Heat excited between them, as the *Alkalies*. Vinegar may be good in Inflammations, &c. and so may *Alkalies*, say I, which I have used with good success in the *Erysipelas*. Neither are *Acids* the only things will quench Thirst: For Water is the only thing Nature requires, to allay a Natural Thirst, which is nothing but the sense of the *Latex* being deficient; and Thirst in Diseases, is sooner allay'd by *Nitre*, or some other neutral Salts, than by all your *Acids*. Oyl of *Vitriol* may be the best Medicine in continual Feavers, you know, in the World, I will grant; but I know a better, and it is an *Alkali*, and such an one, as you ne'er saw. As for easing Pain by *Acids*, let any one try on a *Cancer*, or other painful Sore, or on a Wound: You may try your Tincture, as you call it, but try it on your own Flesh, and you will soon be convinc'd of the contrary, and the more you use the worse; unless you mortifie the Part, then indeed, the pain is far over, as the Mortification goes. But as to inward Medicines, every Body knows, a little *Opium*, will do more in easing Pain, than a large quantity of *Acid*; if it were true, That *Acid* would ease Pain, and *Opium* does not ease Pain by any Acidity in it, as is easily demonstrable. But I have found by long Experience, on my self, and others, That *Alkalies*, in some Cases, are more powerful to ease Pain, than almost any thing else; as in the Tooth-Ach, which I have been often troubled with. Strong fix'd *Alkalies*, every Body knows, apply'd alone to the Skin, are Caustick, and so are *Acids*, as Oyl of *Vitriol*, Butyr of *Antimony*, and the Lunar Caustick. But no *Alkalies* are to be taken inwardly without being Diluted with an *Aqueous Vehicle*, being too keen for the Parts they are to pass: So are *Acids*, which without being given in a *Vehicle* that mitigates them, will even corrode the Mouth, *Pharynx* and Stomach; and both *Alkalies*, and *Acid*, imoderately and unduely given, will deprave the Stomach. For I have known those troubled with sour Stomach yet want an Appetite, as well as a good Digestion. That you say *Alkalies* being convey'd into the Blood, and breaking its Globules, cause *Scorbutes*, *Rheumatismes*, &c. is but mere fancy (if it be much) without ground: For you ne'er saw, or heard of any of those Diseases, caus'd by giving *Alkalies*. As for the injection of Oyl of *Sulphur* into the Veins of a Dog, making him brisk and hungry, and Oyl of *Tartar*, into the other Dog's Veins, making him heavy, and at last killing him: You warily conceal who the ingenious Person was; but we have the same Story in *Etmuller's Discourse de Chirurgia Infusoria*, Cap. 10. And he was a more Ingenious Person, than to embrace the Doctrine of *Acids*, or *Alkalies* either, or any such little Hypothetick fancy of a *Tyro*, and Dy too long agoe, to be one of your Disciples; as you would willingly

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have us believe, the Ingenious Person to be. But he does not tell you, that he made the Experiment himself, but relating the pernicious Effects of the Infusion of Spirit of *Vitriol* from *Fracassatus*; he subjoins that of Oyl of *Sulphur* not killing, but seeming to make the Dog hungry. And this Relation, says he, may seem strange, to him that considers the great affinity of Oyl of *Sulphur* and Spirit of *Vitriol*, that they should produce such different Effects: But being animated, and assisted by a certain Friend, I made the Experiment, and injected 3j. of Oyl of *Sulphur per Camp.* in 3j. of Water, and having made a convenient *Ligature*, let the Dog loose; from whence he soon began to have a short Breath, and to be troubled with *Convulsions*, especially of his Mouth, with a great deal of Froth, which continu'd till he was as it were strang'd, and so Dy'd in half an Hour's time, a great deal of thin red Water flowing out of his Mouth, when he was Dead, with a great deal of Froth swimming upon it. He gives a particular Account of what various Disorders were found in Dissecting him, too long here to Relate; but he concludes thus, It seems that the Blood by the injection of the *Acid* of *Sulphur*, being made thick, unfit for Circulation, stagnated in the Lungs, and there by the Motion of the Air was turn'd into Froth, and Red *Serum*, and being driven on into the smaller Arteries, and thence into the *Vena Cava*, nothing could Circulate through the Lungs; from whence the *Viscera*, and greater Branches of the Arteries were found empty. So far different is the Account of this Experiment he made himself, from what he had, as a Relation, which we may therefore question. But as for Oyl of *Tartar*, whereby another Dog was Kill'd, not mentioning the quantity injected; he tells us, the Blood was made very Red, and more Fluid, than usual: From whence saies he, it appears, that too much coagulation of the Blood, like as too much Dissolution of it, does Kill. He also gives an Account of the Injection of *Aqua Fortis*, and Sp. of *Nitre*; both which suddenly Kill, Coagulating the Blood: And from all which, every Man that can reason, may certainly conclude, that the thinning of the Blood by *Alkalies* can't be the Cause of of all Diseases. And you Mr. *Alkali*, as sharp as you would seem, I believe, will find it yet more difficult still, to make your fancy of *Alkali's* being the Cause of all Diseases, appear but a little likely; if you come in particular to consider, some of the Maladies, common to Humane Nature: For which I will prick up my Ears.

Ac. The first thing I begin with, is the *Small-Pox*, that fatal Distemper to Three Kingdoms, and even to all *Europe* in that by the means of it, God was pleased to deprive us of a Princess whose worth was such, as a sufficient value can never be set upon it, or Loss

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sufficiently Lamented. 'Tis the common Practice of Nurses, and the generality of Practitioners, as soon as they perceive the Symptoms of this Distemper, to give *Gascoin's*, Countess of *Kent's Lapis de Goa*, or some other Testaceous Powders, known *Alkalies*: The one Party to drive the malignity from the Heart, in which it's impossible for any malignity to lodge, more than in any other Part, by reason the Blood moves at least tentimes faster through the Heart, than any other Part, the Lungs excepted: For the Cavities being large no Stagnation is to be feared; but if any where, it is in the extreme Parts, where the Blood moves slowly. The second sort, give them to correct the Acidity, they suppose to be in the Blood. Now I could never hear of any one, that by Analyzing the Blood in the *Small-Pox*, could find the least footsteps of *Acidity* (as I before hinted) but on the contrary, it appears after many tryals, That the Blood of such Persons, does more abound with *alkalous* Particles, than that of sound People: So in this Case, the giving of *Alkalies* must be superfluous, if not highly pernicious. The Causes of the *Small-Pox*, with most other Feavers, and acute Diseases, I suppose to be from a quantity of such Particles, being some way or other admitted into the Blood, which being Heterogeneous, or of a quite different Texture from that of the Blood, and so not capable of being mixed with it, causes a hurry and disorder. Now a *Feaver* always preceeds the eruption of the Pustles, and when the Heterogeneous Particles are thrown out to the surface, then the *Feaver* ceases. Now to assist Nature in throwing out these Heterogeneous Particles, which they pretend, are hindred by *Acids* in the Blood, they give Testaceous Powders, and other *Diaphoreticks*, which seldom fail of their intention, of throwing out large quantities of Pustles, more than Nature is able to bring to maturity, and if she does chance to Cope with them, is the only occasion of spoiling so many Angelick Faces, we every Day observe. But that is not all, but by *Alkalies* the *Globules* of the Blood are broken; when as the Excrementitious *Serum* only, ought to be separated, according to the Rules of Nature, and not the least Drop of Blood, when in its Natural State, and its *Globules* unbroken. But by the means of *Alkalies* the *Globules* being broken, are made capable of being receiv'd into the cutaneous Glands, which is the occasion of the purple Spots in the *Small-Pox*, and *Feavers*, which ne'er fail of being the certain Prognosticators of Death. But this is not all, those broken *Globules* getting into the *Manders* of the Brain, hinder the motion of the Animal Spirits through the Nerves, and cause *Deliriums*, and all those fatal Disorders of the Brain too frequently seen: Likewise the Blood being capable of being contained in its proper Channel, is the occasion of violent Bleedings, bloody-Urine, &c. None of the best
Symp-

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Symptoms. Besides, by their *Diaphoretick* quality they waste the *Serum* that there is not sufficient left to supply and bring to maturity the Pustles, those Medicines alone had thrown out : So about the 9th. 11th. or 13th. Day, the Pustles fall, and the *Acrid* Matter being absorb'd into the Veins, Causes *Secondary Feavers*, of dangerous Consequence : The *Small Pox* requires the giving as few Medicines, as any Disease whatsoever, unless in extraordinary Cases : Yet the Eye of a careful Physician, is as convenient as in any. Indeed, I have heard some complain, such a Doctor had so many Fees, and yet never Wrot a Bill : But let me tell them, in many Cases, especially in this, the Physician deserves his Fees better for not Writing at all, than for so doing. In this Distemper, *Acids* are the things skilfully and timely given, which I have seen not only by my own, but other Great Men's Practice, to be the onely safe, effectual, and never erring Medicines. And why should we fly to *Acids* Chymically prepar'd, when Nature has provided Oranges and Lemons, Citrons and Limes, which answer our intentions ? For in Five Hundred, at least Patients I have had, of all Qualities to do with in this Distemper, where I have been call'd in the beginning, I don't know, that I have had one that has Dy'd, or been Disfigur'd : Nay, some that have been brought into ill Circumstances by *Alkalies*, I have retriev'd from the Jaws of Death by proper *Acids*. To allay the hurry of the Blood, and to confirm its Texture, I give Juice of Oranges, Lemons, Limes in Barley-water, or Small-Beer, acidulated with Oyl of *Vitriol*, Vinegar, or Verjuice Posset-Drink : If the Brain be disturb'd, and the Patient Delirious, I find it absolutely necessary, to let Blood in good quantities, and use more powerful *Acids*, which sets all to rights. So the method I take in the Cure of this Disease, being according to Nature's Dictates, is short and easie : It being in the Cure of this Disease, as in the accounting for the *Phænomena* of Nature ; they that go upon fewest Principles, generally Discover most of her Secrets, and can give the best Account of them.

Al. The *Small Pox* has been Fatal to *English* Princes, more than once ; tho' not so much in it self, as through the ill Practice of Ignorant, or worse Physicians : But that God shou'd be pleas'd with any Evil, be the Cause, or Sender of Diseases, or the Taker away of any such Good, whereby Obedience to his Laws, might be promoted ; I think, cannot be believ'd, but by inconsiderate Sinners, looking on God, as if he were like themselves. If I did believe, that the Sickness of him that is Sick, and the Death of him that Dies, were the positive Will of God, I think, I shou'd be wicked, as well as foolish, in endeavouring to Heal. But it's common with Physicians, when through their Ignorance, Care-

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Iesness, or other fault the Patient Dies, injuriously to say, God took them away, and daringly to lay their own faults upon their Maker. As for Nurses giving Testaceous Powders to drive Malignity from the Heart, I have nothing to say, towards their information: 'Tis Physicians business to look to them, that they onely obey their Directions, and do their proper Office: Nurses know not what Malignity is, and you need not prove to them, that there can't be Malignity in the Heart, any more than any where else, or so likely, as in the Extremities. But the Reason you give, tho' it might serve Nurses (who may believe any thing) if you offer it to Physicians, *viz.* That the Blood moves ten times faster through the Heart, than any other Part (but the Lungs) shews your great Ignorance and inconsiderateness. If you but count the Pulses of your Heart and Wrist, you will soon find your Mistake: And if the Blood shou'd move faster through the Heart (as you fancy) than through other Parts, its Circulation could not continue, the Fountain being empty'd faster, than again supply'd, As for the use of those Powders, you call Testaceous, by Physicians, whom you honourably place, Second to Nurses, and I suppose, Third to your self, I think, none of them so foolish, as to give them to correct *Acidity* in the Blood, any otherwise, than by *Absorbing* it in the Stomach, [And Mr. *Acid* himself once told us, *That none pretend Crab's-Eyes, Pearl, Corral, &c. to be useful any farther, than to absorb Acids in the Stomach, where we know, and you grant, it is sometimes too much,*] and so hindring a supply of *Acid* in the Veins: Where tho' you could never find any, I have told you the Reason before, and how it's Demonstrated, that there is an *Acid* in the Blood. I have also answer'd already, your Assertion that the Blood of Persons in the *Small Pox*, abounds more with *Alkali*, than the Blood of Sound Persons: To which, I farther add, this Observation, That I have seen the Sweat and *Serum* of a sound Person, turn Syrup of *Violets* Green readily; when the very *Ichor* and Corruption in the Pustles of the *Small Pox*, would hardly discolour it: On which account it appears, there was not so much *Alkali*, or so little *Acid*, as in the Sound Persons. And contrary to your Accusation of *Alkalies*, as pernicious: I say, I have never found the giving of *Alkalies* in this Distemper, in the least hurtful, but very beneficial, if duly given; and I have used *Alkalies* here, more than any other Medicines, and never had one Patient Dye, or Deform'd, in two Seven Years Practice. But if the Cause of this Disease, and of most *Feavers*, as you affirm, be from Particles admitted into the Blood, which are of so Heterogeneous, or different a Texture from that of the Blood, as that they are not capable of mixing with it; then it will certain-

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certainly follow, that these *Morbifick* Particles in those Diseases, are not *Alkalies*; *Alkalies* being Homogeneous to, mixable with, and requisite in making up the Natural and sound Texture of the Blood: There being no Blood from whence they may not be gotten in great quantity, and the *Globules*, or Red part of the Blood yields a greater proportion of *Alkali*, than the *Serum*. And thus you have unwarily thrown down, what you had Built before. But here is another Cramp, *viz.* How any Particles that are incapable of being mix'd with the Blood, shou'd (as you say) be admitted into it, and flow with it: None but your sharp sight can see this. As for the hurry of the Blood, or *Feaver*, Caus'd as you say, by those unmixable Particles, being mix'd with it. I say, first it's certain, That Blood naturally contains, or yields abundantly more *Alkali* than *Acid*: Now the *Alkali* alone cannot be put into a hurry, or fermentative Motion, and so grow too Hot, neither will the smallest quantity of *Acid*, cause it so to do; but more *Acid* added may produce a greater Heat; as any Body may see, by mixing *Acids* and *Alkalies*. Now these *Acids* (which probably never are a tenth to the *Alkali*) being subdued, and having lost their Force by being coagulated with the *Alkali*, stick in the Extremities, here and there, and cause little Inflammations, and at length Suppurate, which when they are once thus fix'd, the *Feaver* ceases. Now to assist Nature in Precipitating, and subduing these *Acids*, rather than some unknown, unmixable Particles; the most Rational, and Experienced Physicians have given Testaceous Powders, and other *Absorbents* to hinder a supply of them from the Stomach, the chief *Officine* of Præternatural *Acids*, and also volatile penetrating, and *Diaphoretick* *Alkalies* to help to subdue them already too abundant in the Blood. Which things, as you (shall I say ingenuously or unwillingly) confess seldom fail of their intention of throwing out plentifully the *Morbifick* Matter which Nature is more able to bear, and bring to maturity in Pustles in the Skin than to Cope with in the Blood, there detain'd through the weakness of Nature wanting help, or by *Acids* given hindering the Eruption. And tho' in gross Bodies (which you your self reckon have always more *Acid*, having more Fat) the large quantity thrown out to the Skin, oft spoils those Angelick Faces, you seem so tender of, to get the Ladies Favor; yet the not coming forth of this *Morbifick* Matter, often makes a greater spoil of the whole Bodies of those Angels, laying their Beauty in the Dust. But as few Patients chuse rather to Die with a smooth Face, than Live with a rough one; so it's the Physician's part, rather to take care of Life, than Beauty: And it had been well it had been so in the Case of that Princess, whose inward Form, transcended that of her Face; whose

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whose fair Soul, wou'd have been Conspicuous thro' a rougher Skin, and no less useful; had not her Life been thrown out, instead of the *Morbifick* matter. As for the breaking of the *Globules* of the Blood you talk so much of; it is mere fancy, grounded upon no Experiment. The attenuation of the Blood made by *Alkalies*, as also by the working of the Lungs, is not to be thought a breaking of the *Globules*; but rather a separation of them from adhering together, whereby they are more equally mix'd with the *Serum*: Thence also the Blood becomes more florid, the surfaces of those little round Bodies, when more disjoin'd, being capable of reflecting more Light. Nor is the Extravasation of the Blood, at any time, to be attributed to the breaking of the *Globules*, and making them small enough to pass out of the Vessels, which at the same time sufficiently contain the *Serum*, whose Particles are perhaps a Thousand times smaller than the *Globules*, tho' you shou'd suppose, every one broken into Twenty pieces: But rather from some breach of the small Vessels, from some Corrosion, or other violence, either from without, or from the rapid Motion of the Blood. Neither is the stoppage of the Animal Spirits, from what cause soever, to be thought to produce Deliriums, and such like Diseases: But on the contrary, their over swift Motion from too great Heat. The stoppage of the Nerves, if there be any such thing is more like to cause *Palsies*, *Lethargies*, *Apoplexies*, &c. The *Serum* is not wasted too much by *Alkalies*, or other *Diaphoreticks*, if given with Discretion; and so administer'd, they prevent the falling of the Pustles, and return of the *Morbifick* Matter. As to the few Medicines, you say, the *Small Pox* requires, I readily agree that it requires fewer than are commonly given, and so do all other Diseases: For the giving of many Medicines, as is the Custom of Prescribers, is a Practice wherein the Physician will for ever remain uncertain, whether he do good, or none, or harm, and by what: The Judgment, and Care of a Physician in this Disease, I agree, is also necessary, and the Patient had better hire some Practitioners, especially sower Doctors, to do nothing, than to disturb and hinder Nature in throwing on the *Morbifick* matter, by large and improper Prescriptions. As for *Acids* being the onely safe, effectual, and never failing Medicines, as you say, you have seen by your own, and other Great Men's Practice: I must tell you, tho' you reckon your self among Great Men, That many Physicians Greater in all commendable Greatness, than you, or any other of your great Crab-tree-Heads, have had better success in a contrary Opinion and Practice. I my self can assure you, that *Alkalies* are Medicines, in this distemper a Judicious Physician can hardly want. For as the Ebullition, and Expulsion are not to be too much promoted,

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promoted, or hastily carryed on; so when they are too slow, they ought to be excited, and hastened, which may well be done by volatile *Alkalous* Medicines. A Judicious Physician will not give *Alkalies*, or *Acids* he knows not why, only because they are *Alkalies*, or *Acids*, or follow always one Intention, the retarding the motion of Nature, or allaying the hurry, as you do Great Sir, with your Oranges and Lemons, Crabbs and Limes, which tho' they are milder, than some Chymical *Acids*; yet a drop or two of Oyl of *Vitriol* in an *Aqueous* Vehicle may be a milder *Acid* than the Juice of Oranges or Lemons taken alone. As for your boast, that in Five hundred Patients in this Distemper of all Qualities, *viz.* Emperours, Kings, Dukes, Earls, Madmen, Tinkers, Coblers, and their Consorts, &c. to whom you have sold your Lemons, and Oranges, not one died, or was disfigured; you may as well be believed as the Quack, who said in his Bills, amongst other Brags, that he had been Counsellor to the Counsellors of Twenty Christian Kings: When there are not so many in the World. Nor have you ever had a quarter so many Patients sick of this Distemper. And you might have told us of retrieving from the Belly of Death, as well as from the Jaws thereof, since you believe People expect you should make them *Immortal*. But truly it's unlikely you shou'd do such Miracles, especially in this Disease, when you endeavour nothing but to hinder the motions of Nature, or to allay the hurry, as you call it, which truly is not a method according to Nature's Dictate's: Short it is indeed, and may be a short way to the Grave, and easie it is, for the Doctor to give always the same things; but often very uneasie for the Patient. But if those that go upon the fewest Principles in discovering Nature's *Phænomena*, discover most of her Secrets, and can give the best Account of them, as you say, then those that have but two Principles, as Figure and Motion, *Alkali* and *Acid*, *Acid* and *Sulphur*, are like to outgo you Sir, for you creep upon Five Legs. As for your absolute necessity of Letting Blood in good quantities, where the Patient is Delirious, and the Brain disturbed, it's absolutely Dangerous, and were well let alone for proper Sedatives, for it oft proves pernicious in this Distemper: As in the Case of the best Princess *England* ever had: Neither *Alkali*, nor *Acid*, was so effectual towards terminating the Disease, as the Officious Lance, weakning, and disturbing the Motion of Nature. But methinks we have been long on this Disease, What shall we have next.

Ac. I come to the *Scurvey*, where I expect the cry of all Mankind will be against me, what say they, is there no *Acidity* in the Blood, the occasion of those breakings out of Scabs, Pimples, Botches, and

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and of wandring Pains ? Have Patience, and I will make it appear those Symptoms come from *Lixivious Alkalous* Particles, and First, it appears, That the Blood of *Scorbutick* Persons, has more volatile *Alkali*, than that of Sound Persons, besides, a quantity of *lixivious* fix'd *Alkali*, which I could never find in Sound Person's Blood. Another Argument is, that I have been told that Seamen having had the *Scurvey* in long *East-India* Voyages, Landing at *Cadix*, have by Eating of Lemons and Oranges, been soon perfectly Cured : But in these Cold Countries, we are forced sometimes to have recourse to more powerful *Acids* : Some object that more than ordinary saltness is found in the Blood of *Scorbuticks*, which they take to be an *Acidity*, but instead of *Acidity*, if they will enquire, they will find it to be a *Lixivious Alkalous* one. And here I shall insert a Preparation of *Antimony*, I have found of extrrordinary use in inveterate *Scurveys*. Take *White Powers of Antimony* ℥iij. vol. sp. of *Tartar* ℔ij. digest 14 Days, decant it, then Distill off half the *Liquor*, and keep the remains for use. The Spirit of *Tartar* is made thus, *Ren* : *Tartar* ℔xxx. Distill it in an *Iron-Pot* with a *Moor's-Head*, with a large *Worm* fitted to a *Tub* of *Water* : Distill by degrees as long as any thing will come over, take out the *Caput Mort.* Calcine it to *Greynefs*, put ℔ij. of it into a *Cucurbit*, pour on it the Spirit freed from the *Oyl*, draw off half, with a moderate *Fire*, pour out the remains as useless : put ℔ij. more of the *Caput Mort.* on which pour the Spirit drawn off, and with a gentle *Fire* draw off half, which keep for use. It is a Noble volatile Spirit, and as Noble a *Menstruum*, as I have met with. Of the *Tincture*, I give Four, Six, Eight, or Ten Drops, Morning and Evening, in a strong *Decoction*, or infusion of *Juniper-Berries* half a Pint. This answers every thing said of a true *Panacea*.

Al. If the cry of all Mankind be against your Opinion of the *Scurvey*, it is no good sign you are in the right; for we know your capacity too well, to believe you wiser than all Men. And you have never yet made it appear, that the Blood of any Diseased Persons abounds with *Alkalies*, more than that of the sound People. You have not made sufficient tryals, nor been aware of the difficulties of finding the true Quantities of the Products of Blood, nor have you demonstrated, That there is any thing *Lixivious* in the Blood of *Scorbuticks*. A *Salsum* more or less may be found in the Blood of both sick and healthy Persons, and probably more in the Blood of those that have the *Scurvey*; which possibly a Man of hasty conclusions (as *Mr. Acid* so oft shews himself to be) may take it for an *Alkali*; because it will turn *Syrup of Violets* green, as common Salt, and some other *Salsums* will do, and for a *Lixivious*, or fixed one; because it does

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does not rise easily in the Fire. But if you knew how to work, you would find an *Acid Spirit* come from it in Distillation, as from some other things you take to be *Alkalies*. But a Lixivious Salt, as you have acknowledged, is the Product of Fire, and the Fire in the Blood is nothing but a hot fancy, that makes no ashes. But you must make use of another Fire, before you can get any fixed Salt, or Volatile either out of the Blood. But if you could produce such a resulting body as a fixed *Alkali*, by burning the Blood, or other parts of a Scorbutick, or other Diseased Person, it would not prove, That an *Acid*, was not actually therein before, or that this *Alkali* was : For I have never found a Lixivious Salt, so strong and copious in any Animal Substance, as where there was a manifest and plentiful *Acid*; nor will any other Substance as far as I have observed, yield so much fixed *Alkali* in burning, as those that otherwise, give most *Acid* and Oyl. As for your Scorbutick Seamen cured at *Cadis* (if the Story be true) it may be more rationally thought they were recovered by eating Fresh Meat, and drinking Generous Wine, than by Oranges and Lemons, unless they had been the only things they fed upon. Your preparatiou of *Antimony*, you say, you have found of such extraordinary use in inveterate *Scurveys*, shews your Ignorance in Chymistry, and argues against you, doing all that a true *Panacea* can be said to do, if any one can be so all-believing as to credit you, when no one *Acid* (as you have sometime said) will do so : For what *Acid* will cure an acute Disease, will not Cure a Chronick; Volatile Acids being most effectual in Acute Diseases, fixed ones in Chronick, [to which I must tell you by the by, that you never saw a fixed *Acid* in your life] but your *Panacea* does all things, and yet if made according to your Prescription is no *Acid* : For tho' the *Tartar* by Distillation yeilds an *Acid* Liquor, yet the pouring it on the *Caput Mortuum*, and distilling off but half twice the fixed *Alkali* retains the *Acid*, and sends up only a Phlegmatick Liquor, which is a very poor *Mensurum* ; the greatest Vertue remaining behind, tho' Mr. Chymist throws it away as useles : But as your Liquor may retain some Particles of the Flowers of *Antimony* when digested together, so as it is Vomitive, it may do something on that account, but not as an *Acid* ; the Vomitive quality of *Antimony* depending on something else ; but giving it with half a Pint of the Decoction, or infusion of *Juniper-Berries*, spoils the credit of the other things ; the *Juniper-Berries* justly claiming the greatest share in the Cure, if it do one. But what shall we have next ? What say you to the *Gout* ?

Ac.

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Ac. It has been constantly handed down from Generation to Generation, that the *Gout* is a Distemper not to be cured, and in spite of the noise the last Age has made of Experimental Philosophy, no Man ever went out of the common Road, to try whether that were true or false: But now it do's evidently appear that the *Gout* is not such a Fury, but that it may with ease be overcome by proper and powerful *Acids*. Now if my Predecessors have been so notoriously Ignorant, as to the Cause and Cure of common Distempers, it is not unreasonable to believe they have been so in others: Nay, they have been so. And the reason why People have hitherto in vain attempted the Cure of the *Gout*, has been from their prejudice against *Acids*, which only can do service. What would not People give to save their Lives, and be free from pain? Physicians as the case stands can do neither with any certainty; but by making multitudes of Experiments upon the Foundation I can lay down, the case may be altered. If People were once satisfied, That the abounding of *Alkalies* is the cause of the *Gout*, it follows that *Acids* are the only proper things to correct it. That the *Gout* is caused by *Alkalies*, may appear from the Chalky substance generated in the extreme Parts, which is generated in the time of the Fit only, and is a Collection of Homogeneous Particles, Particles of one determinate Figure, by reason the Fire won't totally destroy its texture; which were it a Body compos'd of Particles of different Sizes and Figures (which are what we Chymists call Heterogeneous ones) the Fire would destroy it. And that they are *Alkalous*, none I suppose will dispute, they answering all the *Phænomena* that most known *Alkalies* will do, viz. cause an Ebullition with *Acids*, and when calcin'd turn Syrup of *Violets* green, and sometimes (tho' not always) will do it without. I take notice few People are troubled with the *Gout*, but those who drink much Wine, or other generous Liquors, abounding with Vinous Spirits: These Spirits meeting with Volatile *Alkalous* Salts, by means of the Salt the Vinous Spirit is coagulated into what *Hellmont* calls *Offa Alba*, which not being capable of moving through the small Vessels, causes Obstructions and Pains, and by the addition of Terrestrious Particles, is turned into the Chalky Substance, I cannot agree with those Gentlemen, who assert all Pain proceeds from a Solution of Continuity. I don't argue, that there is no Pain proceeds from a Solution of Unity, but there are violent Pains where the Union is entire, as in a blow with a blunt thing. But I lay it down as a positive Assertion, that all Pain is caused by a Stagnation of Juices, causing a Compression of the

Membranes

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Membranes : But as the Stagnation is greater or lesser, and as the Stagnating Matter is more or less *Acrimonious*, so is the Pain greater or less, but there is no Pain in any part without Stagnation. People have more reason to believe there is a Solution of Unity in the *Palsie*, where there is a visible Consumption, tho' there, they are altogether void of Sensation. The Medicines I use are few, and mostly well-known, but never used in the manner I have done : The general Basis of them is the same, they being all *Acids* ; and my Medicines will put no force upon Nature, have no hazard, but strengthen all the Parts. I have given as clear hints, nay clearer than ever were given of the Cure of the *Gout*, which has hitherto been vainly attempted, but my method will as certainly Cure the *Gout*, as the *Cortex*, *Agues*, or *Opium* make Sleep, and I have known it fail but two or three times, and those were to be imputed rather to the Perverseness of the Patients.

Al. I cannot forbear to tell you Mr. *Acid*, there has not been a more Ignorant Calumniator of all Physicians, or Confident Praiser of one little Quack, than You ; perpetually shewing us, that you have neither Read others, nor known your self. All the Physicians of the World, from generation to generation, have affirm'd the *Gout* incurable, and tho' the last Age hath made a noise of Experimental Philosophy ; yet to spight them, no Man would go out of the common Road, to try whether that were true, or false. Till *Colbatch* rose, who hath made it appear, that the *Gout* is not such a Fury, but it may be overcome by powerful *Acids*. *Colbatch's* Predecessors have been notoriously Ignorant of the Cause and Cure of common Diseases ; much more of the *Gout*, or else *Colbatch* has been notoriously ignorant and abusive of his Predecessors. For every Body acquainted with Authors, knows there's not one of any Note, but has Writ more Learnedly and Judiciously of this, and other Diseases ; and whose Observations of Cure, are abundantly more Credible than Mr. *Acid's*, whom we can prove a Lyar, by his own Words. For he has acknowledg'd his Master *Helmont* to deserve better, of the World, and to be a greater Man than himself. Yet he among the rest, his Scholar *John* saith, hath affirm'd the *Gout* incurable, and been ignorant of the Cause and Cure of common Diseases. But *Helmont* hath asserted the *Gout* Curable, and professeth himself Master of a Medicine, viz. *Arcanum Coralinum* of *Paracelsus*, which radically Cures the *Gout*, and many other Diseases, and it is not an *Acid* neither, being a fixed Medicine. And *Paracelsus* before him, whom you couple with him in your contradictory Praises and Dispraises, if we may give no credit to his own words seeing
by

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by you, that great Doctors will lie, hath a sufficient Testimony of his Abilities in Curing the *Gout*, as well as other difficult Diseases in his Epitaph on the Church-wall at the Hospital of *Saltzburg*, as following: *Conditur hic Philippus Theophrastus, insignis Medicinæ Doctor, qui dira illa vulnera Lepram Podagram Hydropisim, &c. Mirifica arte sustulit, &c.* And he was one as well as *Helmont*, that had no prejudice against either *Acids* or *Alkalies*. That nothing but *Acids* can do any service in the *Gout*, is an assertion contrary to the Judgment and Experience of all the Physicians that have Writ of this Disease, and the Practice of Mr. *Acid* himself, as I believe, we shall find before we have done; and so universal, that no Man wou'd have said so, but one Confident enough to say, he knows all Things, and foolish enough to contradict himself. What would not People give to save their Lives, and be free from Pain? Physicians in general, the College themselves, if they be Physicians, can do neither for them, with any certainty, till they have made multitudes of Experiments on Chymist *Colbatch's* Foundation, which may be long a doing. Therefore Sirs, if you are Wise, come to their Master himself, he can do both, if you can believe him, and be sure to pay him well for his Lilly, White Vinegar. It may be a great while e'er many of the People call'd Physicians come to be satisfied, that the abounding of *Alkalies* is the cause of the *Gout*; but if they were, it will not follow on your Hypothesis, that *Acids* are the onely proper Correctors of it. We will suppose, that in the *Gout*, or any other Disease, there is too much *Alkali* in the Blood: What is to be done? Why, it ought to be carry'd off by the *Emunctories*, say you. By what means? By *Acids* say you. How can *Acids* do it? Why, they are contrary to *Alkalies*, say you, and fight them wherever they meet, conquer them, and make them quit the Field. No say I, 'tis a mistake, they are not contraries, or Enemies, but as good Friends as any old Sweet-hearts, separated against their wills. They rejoice when they meet fall a Dancing till they are hot again, & when tired they lie down together in mutual and close embraces, and are so wedded by the Law of Nature, that they will not be divorc'd, unless one of them can be tempted to Adultery; then indeed the other does not beat, but leave its Companion with disdain. Your Master *Helmont* tells you, There are no contraries in Nature (he means Bodily Nature) but contrariety is only in Wills: And he gives you good Reason, for what he says: But could *Alkalies* and *Acids*, any way be said to be contrary, What then? It don't follow, that one must needs thrust the other out of Doors; and if they did, one would think the Destroyer of all Things, being too much for the other, must thrust it out: What is stronger than

Death?

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Death. But experience tells us, that whereever they meet, they so combine that they are both harder to be drove out, than either of them single. You have an instance in *Sal Armoniack*, made of the *Acid Spirit of Salt*, and *Volatile Alkali of Urine*; which *Alkali* alone is so Subtil and Dissipable, that it will fly with the least heat, and is hardly kept without wasting, except with well fitted Glass-stopples; but combin'd with *Spirit of Salt*, they are coagulated together into a Body, that will be kept open without any loss of Substance, if urg'd with heat will indeed fly but together, and that not without a considerably strong Fire. But if the *Volatile Alkali* be united with some *Acid* that is not coagulable into a Body, it will nevertheless be rendred less Volatile, requiring a greater Fire to raise it, than it did alone. Now if *Alkalies* and *Acids* can be thought to meet so copiously in the Blood, as to make what you call a Conflict, but I with better reason term a Dance or Playing together, and produce an ebullition, and Heat; that Heat may deserve the name of a *Fever*, and be a disturbance in the Vital *Oeconomy* equally, whether it be a Dance, or a Fight, if there be too much of the Sport; and these two Bodies combin'd, especially if the *Acid* be of any considerable quantity, will be less apt to be carried off by Transpiration, than the one of them ever so abundant. But if there cannot be so much *Acid* pour'd in, as to make an Effervesceence and Coagulation with the *Alkali*, which is in Sickness, and ought to be in Health abundantly more than the *Acid* can be; yet the *Acid* may have this effect, as to thicken, and hinder the motion of, the Blood, and thereby render it more unapt to discharge the *Alkali*; if we suppose it ought to be discharged. And that *Acids* do coagulate and thicken the Blood, we have often seen upon tryal with Oyl of *Sulphur*, as well as Oyl of *Vitriol*. So far is *Acid* from being the thing, much less the only thing that can discharge, and drive out your fancied noxious, and to be discharged *Alkali*. And tho' *Acid* may be proper enough in some Diseases, where the Blood is too thin and moveable to thicken it; yet in such Diseases as *Sturveys*, *Rheumatizms* and *Gout*, where the Blood is already too thick, and apt to Coagulate, and stick in the small Vessels; the making it thicker by *Acids* must needs be improper, contrary to all Indications of Cure. The Chalkey substance generated in the Fits of the *Gout*, does not prove the Disease caused by *Alkalies* rather than by *Acids*. For *Alkalous Salts* when in solution, are not Coagulated alone, but by meeting with *Acids*; except by evaporation of the humidity they are dissolved in, which can't be supposed here. Neither is the *Creta* a Salt, and were it as you say produced of the *Volatile Salt* of the Blood and Homogeneous, it must

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must be all Salt. But you never saw a Salt insipid, or a Volatile one constant in the Fire, as you say this matter is. Nor are all Bodies consisting of Particles of different Sizes, and Figures (which is what you are so kind as to tell us you Chymists mean by Heterogeneous) totally destroy'd by the Fire, as you may see in Bricks, Bones, Glass, Metals and a Thousand things. But the Podagricks Matter, as *Kerkring* tells us, *Spicileg* Obj. 28. by Distillation yields a Spirit of a middle nature, between Spirit of *Tartar* and Spirit of *Sal Armoniac* more Acid than one, and more mild than the other, and an Oyl very like Oyl of *Tartar*, leaving a fixed Salt in the *Caput Mort.* much like Salt of *Tartar*: Where are your Homogeneous Particles Sir? But the abounding of *Alkalies*, right or wrong you will have it, is the cause of the *Gout*. But how I pray you Sir, after what manner? Why, few are troubled with the *Gout*, say you, but those that drink Vinous Liquors; and so the Blood abounding with Vinous Spirits, these Vinous Spirits meeting with Volatile Alkalous Salts, are by the Alkali Coagulated into what *Helmont* calls *Offa Alba*; which not being capable of moving thro' the small Vessels causes Obstructions and Pains, and by the addition of Terrestrious Particles, is turned into a Chalkey Substance. Now *John* I have caught you, and you cannot come off your Contradiction, but by begging Pardon on the account of your very Treacherous Memory. The Chalkey Substance was but now a collection of Homogeneous Particles (that is, Particles of one determinate Figure, as you pleased to English it for us) but now it is a Compound of a Vinous Spirit, an Alkali-Salt, with an addition of an Earthy Matter. This is the result of abundance of Experiments no doubt; these are Grounds to build your Practice upon, whereby you are able to do more than other People, that is, than all the Physicians of all Ages. But I must tell you for all that, that you grossly mistake *Offa Alba*, not knowing what it is. But I tell you, it is not a Coagulation of a Vinous Spirit, but a Precipitation of the Urinous Salt out of its Phlegm, by the affusion of the Vinous Spirit; but unless the Vinous and Urinous Spirits be both strong it will not do; nor will all Urinous Spirits make the *Offa Alba*. The reason of this Phenomenon where it succeeds is this, The Volatile Salt not being Soluble in strong Spirit of Wine, and having but little Phlegm of its own, more than what will dissolve it, the Vinous Spirits being apt to mix with that Phlegm, fills its Pores, and so it lets fall the Salt. But it's impossible to find a Living Man's Blood so strongly Alkalous, as that there should be but just enough *Latex* to dissolve the Salt: Nor were it possible, can there be added Vinous Liquors in quantity, and strength enough to make

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make such a Coagulation. We Physicians all know, Mr. *Chymist*, that the Blood never abounds so much with *Alkalous* Salt, as to make so much as a weak Spirit, nor can the Spirit of the Wines we drink, be separated from the Phlegm in our Bellies, nor can we drink Vinous Spirits strong enough to Coagulate an *Alkalous* Spirit. Moreover, this *Offa Alba* which *Helmont* talks of, is so very Subtil and Volatile, that it would easily find passage, and be carried off through the smallest Pores by a gentle Heat, and would be so far from Coagulating into a Chalkey Substance, as that it is a good Medicine to thin the Blood, and hinder Coagulations, as also very beneficially used externally in pains, of the *Gout* it self. As for Pain tho' you grant some Pain, may proceed from a Solution of Continuity; yet you can't agree with those that say, all Pains do: But there are violent Pains where the Union is entire as in a Blow with a blunt thing. Truly Mr. *Acid*, you are a Man of a blunt Understanding, for all you have a sharp Name, or else you would easily perceive, that in any Blow that is painful, there is a violent pressure made upon the small Vessels which bursts them, and forces the Blood out of them; which is the cause of the Blackness often following Blows, and there can be no Extravasation without a solution of Unity more or less. So all violent distentions, all Corroding Matters make Solutions of Unity, breaking some of the small Fibers, at which we have the Sensation of Pain. But your positive Assertion, that all Pain is caused by a Stagnation of Humours, and thence a Compression of the *Membranes* must be excused as a fault of a very Treacherous Memory: Some Pains come from Solution of Unity you grant, and yet presently say you, all Pains proceed from a Compression of the *Membranes*. Truly Doctor, I should be afraid to trust my Life and Health with a Man of such Brain; I should be afraid he would forget to morrow, and Prescribe contrary to to day's Prescription. But I will ask you a Question or two, because you are very sharp at a present thought. Are there no Pains but in *Membranes*? And does not a Stagnation and Flux of Blood into a Part, cause the Swelling and Distention of one Part as much as the Compression of another? And does not Distention, as well as Corroding Acrimonious Particles break the Fibers? And are not Wounds both Incisions and Punctures in many Parts presently painful, where we can suppose no present Stagnation? If you cannot say no, and shew us better Reason than you have done yet, we shall hardly be of your opinion, That all Pain proceeds from Compression of *Membranes*. As for *Paralysis*, tho' it sounds something of Solution; yet supposing you do not much insist upon the meer Greek of it, we will deny it

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to be a Solution of Continuity, and rather take it to be a Relaxation of the proper and natural Tension of the Instruments of Motion; but we suppose Mr. Acid suffer'd a Solution of his Senses, when he said *Paralyticks* were altogether void of Sensation; for the want of Sensation is another thing, the *Greeks* call it *ἀναίσθησις*. As for the Medicines you use in the *Gout*, I believe you, that they are few, and well known, and were so before you knew them; but never used in the manner you use them: That's with so little Discretion. For Physicians use to consider various Indications, and so give divers kinds of Medicines; but you have no more Indications in your *short and easy method*, than the Quack had, who gave a *Glisten* for every thing; to the Old Woman for the Tooth-ach, and to the Man that lost his Cow: He was for nothing but discharging the Excrements of the Belly; you for nothing but Purging the Veins of *Alkali*, your supposed Excrement of the Blood. Whether your Medicines be all *Acids*, as you say, I shall know when we come to consider them particularly. The clear hints you say you have given of the Cure of the *Gout*, seem no clearer to me than what we had before, from your Predecessor *Atkins* the Taylor, who was famous in his time, as you are now, for Publishing the Wonders of the *Gout-Balsam*, which is a Medicine (if I may call it one) so far from putting no force upon Nature, that it will corrode, blister and excoriate the Parts, doing nothing but as a *Cautstick*; and what has been done before you were born, by the burning with *Moxa*. We see nothing you have done which hath been attempted in vain by others, nor the certainty you brag of *Acids* Curing the *Gout* as well as the *Cortex* doth *Agues*, or *Opium* make sleep: Your own Observations you have given us, which doubtless are not the least of your Cures, Certifie us, that your Patients have been Three, Four, Five, Six, Seven, or more Weeks under your Hand, not only in the *Gout*, but in meer *Fevers* even acute ones (if you don't miscall them) which is as long or longer than others keep them with *Alkalies*. So far have you been from shewing us the *Wonderful and Astonishing Success* in *Curing Fevers* you have bragged of. Nay, you have not given us any assurance, that you have Cured any of the Patients you mention, (tho' you say but two or three have fail'd) they might have been well as soon, or sooner by a contrary method, or without any Medicines, for ought you know. But a Fit of the *Gout* being even with a Sowr Doctor a tedious long thing, and when over, the Disease not Cured; let us dwell upon it no longer, but come to consider some other Distemper: What say you of Consumptions?

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Ac. I have seen numbers of People under this Circumstance, to whom have been given large quantities of *Alkalies*, and all sorts of *Balsamicks* and *Pectorals* without any advantage; tho' I have seen others who have had the manifest signs of a confirm'd *Phthisis* or *Consumption*, by the plentiful use of *Acids*, reduced from a state of dying, to that of perfect Health. The *English Consumption* is from an Ulceration of the Lungs, and I believe without Vanity I may say, I have Cured more true *Consumptions* in the space of one Year, than any Physician in *England* has done. My reason for the use of *Acids*, and disuse of *Alkalies* here, are as follow. The Globules of the Blood by being mixed with a great quantity of *Acid*, *Alcalous*, Lixivial Particles, are broken and confusedly mixed with the *Serum*, and so admitted with it into the small Glands of the Lungs, and not being capable of being discharged cause *Inflammations* and *Hectick Feavers*. Now by *Alkalies* the extravasated Globules are not thrown out, but the Blood made worse, and by *Balsamicks* the Pustules from the extravasated Globules are brought to suppuration; whence comes Ulceration, and he must shew himself an Artist indeed that can heal such Ulcers. Now proper *Acids* being given in due time confirm the texture of the Blood, and reduce the *Serum* into Fluidity; by which the *Feaver* and *Inflammation* are taken off; the extravasated Globules by a thin *Serum*; and the motion of the Part carried off; and so the Pustules disappear. But how comes it to pass that the broken Globules are admitted along with the *Serum* into the Glands of several Parts, and yet cannot by the same reason be carried off? I Answer, the broken Globules just coming out of the extremities of the Arteries are hot, and their sides lax, and so capable of being compressed, but, admitted into the Glands; the motion of the *Serum* being slow they soon grow cool and firm, and by the different Figure of those broken Globules, from the Pores the *Serum* passes, they are not suffered to pass; so being without motion they corrupt, whence are the Symptoms. Now to confirm what I have said, besides my own Observations, *Riverius* saith, that with Conserve of *Roses* acidulated with *Oyl of Sulphur*, he has several times Cured a confirm'd *Phthisis*. And of *Oyl of Sulphur* *Helmont* tells you, that he advised a Man to take two Drops thereof every Meal, and not to exceed that Dose, who thereby lived to Old Age free from Diseases. By which instance it appears *Acids* are not the cause of Diseases, but Preservatives, and what ever is a Preservative from Distempers, by the same parity of Reason must be of use to repell them.

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Al. That you say, you have seen, and done such, and such strange things, is very little Ground of our Faith, That it was so. I have heard a Montebank e'er now, that could neither Read nor Write, Boast as great Experience, and promise, That he wou'd Cure those, whom all Men in the World had left off, as Incurable : From a state of Dying, to that of perfect Health, is a great Change ; especially to one who has affirm'd, That, *none are in perfect Health* : But I suppose, you would have as well said from a state of Death, to perfect Health, if you could have hoped for Credence. If you had said, you had Cured as *many of Consumptions, viz. Ulcerations of the Lungs*, as any Physician in England, such a Year ; you might possibly have been believed : But to say, you Cured *more*, implies, you Cured *some*. But you are witness for your self Sir. And that an Ulceration of the Lungs, is peculiar to England, is a fancy peculiar to Mr. Acid. And that there are not divers *Consumptions*, where there is no Ulceration, is his single Opinion. But as to your Reason for the use of *Acids*, and dislike of *Alkalies*, viz. That the *Globules of the Blood* are broken, by acrid *Alkalous Lixivial Particles*, and so admitted into the Glands, with the *Serum*, and not being capable of being carry'd off with the *Serum* ; growing Cold and hard, cause Inflammations, and being suppurated Ulcerations ; is a mere incoherent Fancy : *Not being in the least valid with me, being not confirm'd by well Attested, or any Experiments.* You never saw the broken *Globules* you talk so of, but in your Wild Imagination. and can't assure us, into what Figures they are severed ; how differing from the Pores they cannot pass with the *Serum* whilst broken thus into lesser pieces ; but can, when once united again, and confirm'd by *Acids*. The Pustles you fancy in the Lungs, you never made appear, or felt the broken *Globules* there cold and hard, or heard the *Biolichnium* (that keeps them *lax* and soft, or if you please, in flux) hiss, quench'd in the cool extravasated *Serum* of the Lungs. Besides, you must suppose, That this Disease is still produced by Physicians, whenever caus'd by means of *Lixivial Particles* : For as we told you before, there can be no *Lixivial Salt* in the Blood ; it being a product of real, yea, common Fire. And still one wou'd think, That if the *Globules of the Blood* can be broken by *Alkalies*, they might be broken still by more into lesser Parts, and so pass out by the *Diaphoretick* power of *Alkalies* ; rather than when confirm'd again by *Acids*. That *Balamicks Cause* Suppuration, is contrary to the common Experience of all Physicians, who know they hinder Corruption. When the Lungs are Ulcerated he must be an Artift indeed, that can heal such Ulcers : True, And it's such a piece of Art, I believe, an *Acid Doctor* never perform'd, tho' he himself may Boast such Cures : 'Tis no un-

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common thing for Quacks, to perswade their Patients, if they have but a Cough, and Spit a little, that they have a *Consumption*, their Lungs are corrupted, ulcerated, and wasted; with as great Confidence as if they could see through them: When the Patient is well again, a mighty Cure is Brag'd of: And who can then disprove it? but he that sees an impossibility in the thing. That *Acids* confirm the Texture of the Blood, and make the *Serum* thin; is so far from Truth, that they do the contrary, as any one may see by Tryal, and find, That Mr. *Acid* saies any thing merely for his Hypothesis sake, without the least Reason, or Experience. As for *Riverius's* Curing a confirm'd *Phthisis* with Conserve of *Roses* Acidulated, the matter is to be questioned, especially, whether Oyl of *Sulphur* were the onely thing used with benefit; if *Riverius* ever said so: For you could not tell us where. And the Man that *Helmont* advis'd Oyl of *Sulphur* to, might have Liv'd as long and healthy, without that trivial thing, as he calls it, for ought you, or *Helmont* either knew, who charg'd him not to exceed two Drops, being sensible of the danger of taking too much of so keen an *Acid*. *Acids*, or any thing else, being suppos'd Preservatives, does not conclude, That they must be Curatives: For Food, Air, Exercise, Content, &c. are Preservatives; but none will therefore expect to Cure all Diseases by them. But Mr. *Acid* is resolv'd upon the Fancy, That *Acids* do all Things, confirm the Blood, and make it thin if thick, or thick if thin. or what he pleases. But how this is done, Mr. *Acid* must be Wiser than Solomon to tell: But what say you to *Rheumatisms*?

Ac. This is another Distemper said to proceed from *Acids*, but falsly: For here having analiz'd the Blood by the Fire, I have found it abound more with *Alkalous* Particles, than that of sound Persons, from which alone it may be inferr'd, That it proceeds not from *Acids*, but from *Alkalies*. But it may be objected, Whence comes the sizyness and viscosity of the *Serum*, if not from *Acids*? Every Body that knows what *Hart's Horn* is, knows that the reason of its making Gelly, is from its abounding with Volatile *Alkalous* Salts: For the same reason, Calves-Feet and *Isinglass* make Gellies. And if the Viscosity of the Blood can be taken off, this Distemper vanishes: But this is not to be done by *Alkalies*; but by proper *Acids*, such as the foremention'd Tincture of *Antimony* and *Chalybeats*. But People will say, I have caught my self in a Trap, when I bring *Chalybeates* in as *Acids*; when all own them to be *Alkalies*; inasmuch as Fileings of Iron will make as great an Effervescence with all sorts of *Acids*, as any of the *Alkalies*. From this difficulty, I shall endeavour to extricate my self, and to prove, That Iron or Steel till it be converted into

Vitriol (and every Body will allow *Vitriol* to be an *Acid*) can't act upon the Blood and *Serum* to cause an alteration, nor any way enter into the Veins and Arteries: Skillful Practitioners before they give *Steel-Medicines*, ask their Patients, Whether they have any *Acidity* in their Stomachs (where I allow *Acids* sometimes abound exorbitantly) and if they are sensible of any *Acidity* there; then they give *Iron* without any Preparation, which by the *Acid* in the Stomach, is turn'd into *Vitriol*, and so made capable of being carry'd into the Blood: Whereas had it been before satiated by Preparation, it had had no Effect at all: If there be no *Acidity* in the Stomach, it is carry'd off by Stool, and not admitted into the Blood. And most of the Preparations of *Steel*, I know of, good for any thing, are made by *Acids*, which turn it into *Vitriol*: But *Alkalies* do so lock up the Body of *Iron*, as to make it unfit to be taken as a Medicine. The Preparations of *Mars* I generally use, are that which goes by the Name of Doctor *Willis*, and that which follows, *R. Filings of Mars lbijß. sal Armoniac, lbij. pulverise and mix in an Iron-Mortar, let it stand a Week in a Cellar, then put it into a Crucible and keep it almost Red Hot an Hour, when cold make it into fine Powder, and keep it in a Glass-Bottle*. These Medicines I have known of great use in *Rheumatismes*, and the last has never fail'd me in the most inveterate Obstructions of the *Menses*: Father, in answer to the Objection, That *Steel* can't be an *Acid*, because it makes an *Effervescence* with *Acids*: I say, all *Sulphurs* mix'd with *Acids*, will cause an *Effervescence*, and some of them take Fire: And that all Metals are full of *Sulphurs* is past Dispute; and from this way of arguing, *Sulphur* must be an *Alkali*. But besides the Preparations of *Steel*, I have oft used *Cinnaber* of *Antimony*, or common *Cinnaber* with good Success, mix'd with *Gum Guajacum* in confirm'd *Rheumatismes* and *Sciaticæ*. I did believe *Cinnaber* to be an *Alkali*, but I find by a peculiar management, a large quantity of *Acid Spirit* may be got from it.

Al. As to your Assertion, That the Blood of *Rheumaticks*, in Analizing it is found to abound more with *Alkali* than that of Sound Persons, I have answer'd you before. I shall only add your own Confession about Analizing the Blood, That it wou'd be almost impossible for any private Man to make a sufficient number of Experiments requisite. And we find in the Experiments you have favour'd the World with, you have Analiz'd the Blood of but one Healthy Person, when you ought to have try'd rather an Hundred Sound Person's Bloods first, and have seen the difference of their Products, and have made your Tryals in large and equal quantities, and not such little odd parcels as you have done; if you would be at any certainty. As for your Reason of the *Viscosity* of the Blood

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in *Rheumatismes*: I Answer, Every Body that knows what volatile *Alkalies* are, knows, That they have not only nothing of *Viscosity* in them themselves, but also render the Blood and Serum thin. And you make a mighty noise, how *Alkalies* break the Globules of the Blood; but if you had any Consideration, you wou'd not think, division into smaller Parts, is the way to thicken. But perhaps *Alkali* is such a bad thing as to thicken, and make thin both, according as there may be Mischief done: Being the Destroyer or Executioner of all things, has more ways of Killing than one; As *Acids* will thicken and make thin, when you wou'd have them. But as for *Hart's-Horn*, *Ising-glass*, Calves-Feet, if it be from *Alkalies* that they make Gellies: Why, don't other Animal Substances abounding as much, and more with *Alkali* make Gellies as well as these? And why do Vegetables (that you say abound most with *Acids*) make Gellies, as well as *Hart's-Horn*, &c. as we see in *Mallow-Roots*, *Comfrey*, *Quince-Seeds*, &c. The *Viscosity* of the Blood is to be taken off by proper *Acids*, you say; But I have said enough already of the contrary Effects of *Acids*, to shew your Mistake in this Opinion, and Ignorance in relation to your Tincture of *Antimony*: But as for *Chalybeats*, People may well say you have caught your self in a Trap, by bringing in *Chalybeats* as *Acids*; for every Physician knows, That Metals, especially *Iron*, blunt and Absorb *Acids* making an *Effervescence* with them, and are dissolv'd by them. But let us see how you get out of this Trap? Why *Iron* say you (as you told us once before) can't ast upon the Blood and Serum, nor enter the Veins and Arteries, till turn'd into *Vitriol*. How prove you this Sir, that *Iron* won't be admitted into the Blood till turn'd into *Vitriol*, and that it will then? It is only because you fancy so, for you have never shew'd us by any good Experiment, that *Iron* either unprepared, or turned into *Vitriol* will pass into the Blood. But if your *squeemish temper* would have suffer'd you to meddle with the Subject, you might have took a T——d, and a like quantity of Blood from some of your Patients under a Steel-course: First of unprepared *Iron*, then of *Iron* prepared with some of your Noble *Acid Menstruums*; from one of a sower Stomach; from another without a sower Stomach, and have got some body that knows how to reduce Metals to assist you (your wonderous Friend Mr. *Stringer*, sure would not have denied his help) and when you had seen which way the *Iron* goes, you might have been confidently positive, or modestly silent, or have been convinced that Physicians do not give *Iron* supposing it will pass into the Blood, but to absorb *Acids* in the Stomach and Bowels, and to hinder them from passing into the Blood, which if they were turned

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turned into *Vitriol* by fowr Stomachs (which I believe has not been proved) and so necessarily carried into the Blood, and could act there as *Acids*, would frustrate the Physicians intention, who only aimes at cutting off a supply of *Acid* from the Stomach the grand *Officine* thereof. But suppose Iron either unprepared, or turned into *Vitriol*, will or will not pass into the Blood, What's this towards proving Iron an *Acid*? Why Iron may be turned into *Vitriol* by an *Acid*? Tarbox, Iron is an *Acid*: Here's Logick for you Sirs: Or, the *Acid* in *Vitriol* is an *Acid*, therefore the *Alkali* in *Vitriol* is an *Acid*. You might as well say, the Volatile Salt of Urine is an *Acid*, because the Spirit of Salt which is embodied, and coagulated with it in *Sal Armoniack* while separate was an *Acid*. But say you, every Body allows *Vitriol* the whole Compound to be an *Acid*; and therefore you infer, that Iron one of the Ingredients is an *Acid*. I Answer, Neither is the Premiss allow'd, nor your Consequence Natural. I deny *Vitriol* the whole Compound to be an *Acid*, it being but a Neuter, and the *Acid* in it never acts as an *Acid* in this form; being absorb'd, sheath'd, and spoil'd of its *Acid* force (the Compound being but a *Salsum*) till separated again, which cannot be but by a Fire great enough to calcine an Ass-eyed Chymist's Bones. As for your Argument, That Steel may be an *Acid*, tho' it makes an effervescence with *Acids*; because all *Sulphurs* mixed with *Acids* will do the like: I say, that all but Ignorant *Tyros* know the contrary; that no *Sulphurs* properly so call'd, viz. *Brimstones* will make an effervescence with *Acids*, or be easily touched by them. Some Oyls indeed will grow hot, and make an effervescence with some *Acids*, even to a Flame, but not all with all, as is well known. But as for Metals, I tell you, you never saw a *Brimstone*, much less an Oyl extracted, or separated from them in your Life; tho' 'tis past dispute with you, and so we need not argue *Sulphur* to be an *Alkali*: But we cannot think it an *Acid* unless we deny our Senses, much less are those Oyls that will grow hot with *Acids* to be thought so. But I think you have caught your self in another Trap, by allowing *Acids* sometimes to abound exorbitantly in the Stomach, which exorbitant abundance of *Acids* must be supposed a Disorder or Disease (as you elsewhere confessed) as well as exorbitant *Alkali*, and so all Diseases are not from too much *Alkali*. But I believe there is never more exorbitant *Acid* in the Stomach or any where else, than in the Patient, who is so unhappy as to fall into the hands of Mr. *Acid*, who tho' he acknowledges *The Heart-burn* caused by *Acids*, yet absorbents are far from being useful in this case, says he, but the *Heart-burn* is as often cured by *Acids*; such as Oyl of *Vitriol Dulc.* &c. as by *Alkalies*.
Here's

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Here's that which hangs together finely! All Diseases are caused by Alkalies; yet some by Acids as the Heart-burn, and too much fullness; yet Alkalies are far from being usefull, but the Heart-burn is as often cured by Acids, such as Oyl of Vitriol, as by Alkalies; that is not oftener than by Alkalies which Cure it sometimes, tho' they are far from being usefull. So in this Disease, if you come to Mr. Acid, you must be Cured by that which does it no oftner than that which is far from being usefull. Truly every rational Man will think Acids so far from being usefull to Cure a Disease from too much Acidity, that he will account it no less than *Ignem oleo extinguere*. Wo be to your Patients, Here Sir you will make the Biolychnion Blaze. But truly, I must tell you, These Contradictions can't be the faults of a Treacherous Memory, but rather the want of Wit. Well, as to Mars, again all the preparations of it you know good for any thing are made by Acids. That may be I confess, if the Pestle and Mortar are Acid Menstruums; but I tell you John I know good Preparations of Mars not made by Acids, and yet the Body of Mars open'd more than by any of your great Acid Menstruums. But if no preparations of Mars were good for any thing but those made with Acids, why do you use others, and so trap your self again? That which you give us the process of is not made by an Acid; *Sal Armoniack* being no such thing. But a Composition of Sea-Salt and Volatile Alkali of Urine: the Sea-Salt it self being no Acid while in this form, or till altered by a strong Fire. You have sometime confessed, that some Preparations of Steel and Antimony given as Alkalies, did you great service; but since you have well examined them, you find them most Noble Acids. Sure your Tryals have been very unhapy to lead you into Mistakes, or you have forgot your Rule, That whatsoever in Distillation yields a greater quantity of Alkali, is an Alkali, et Vice Versa; or I believe, it wou'd not do here; for you may Distill Steel, and Twenty things more, long enough before you can get either Acid or Alkali to come over: Nor could you prove by this Rule, That Cinnaber is an Acid, which you so mightily commend in this, and other Cases, and say you, can speak Ten times more than Hoffman in its Praises; tho' he Wrote a Treatise of it, which I believe you can a Hundred times more, but your Credit will be a Hundred times less. But I must tell you, That Cinnaber is so far from being an Acid, that if Analiz'd a lb will yield $\frac{3}{4}$ liij, or more of running Mercury, one of the greatest Absorbers of Acids in the World, and the rest, viz. the Sulphur, is not an Acid; but a Compound of an Acid and an Oyl, whereby it is so sheath'd and entangl'd, that it can't act as an Acid, nor be set at liberty so to do, but by a burning

ing Fire, You never found a larger quantity of *Acid* got from *Cinnaber*, than what may be got from the *Sulphur* that goes into the Compound, which is so much less than the *Mercury*. And now *John*, considering your continuing Ignorance of the Medicines you use, I think I may say truly of you, as you say falsely of all Physicians; if you Cure Diseases it is by chance, as a blind Man may catch a Hare, giving some tolerable Medicines as *Acids*, when indeed they are *Alkalies*, seeming incapable to judge, or make fair Tryals; since your Brain is turn'd in the Production of your sower Hypothesis, and the Idea of *Acid* so strongly fix'd in your Imagination (like a true *Beelzebubite*) whatever is good is *Acid*, and whatever is bad is *Alkali* with you: Your Tongue so strongly impregnated by all sorts of Sows, no *Alkalies* are strong enough to over-power them, and give you their genuine Tastes. And I don't question if you let me know farther of the Medicines you prescribe, and let Men in their Senses be Judges, I shall find you mistaken in other things besides *Mars* and *Cinnaber*, and shall be forced to reckon you with one of these two Quacks, he that gave every Patient the Receipt that came uppermost in his Budget, wishing him good Luck; or he that made such a horrid noise against *Mercury*, Cure without *Mercury*, great is the Danger of *Mercury*, &c. when he himself gave even crude *Mercury* in his Pills, envying (as it is like) other Persons the profit of using it. Here's Fool and Knave, Which will you be for *John*? Do you Ignorantly prescribe *Acids* or *Alkalies*, as they happen to lie uppermost in your sower Noddle? Or, do you decry *Alkalies* with a Design if possible, to have the sole use of them. For really if you can perswade me out of Conceit with *Alkalies*, I shall never use *Mars*, *Cinnaber*, nor a great many other things you prescribe.

Ac. I confess, I have formerly been a stickler for *Alkalies* (being carry'd away by the common Vogue) and seeing the insufficiency of common ones, have been at great Expence, and vast Trouble to Volatize Salt of *Tartar*, till at last by Daily Observations, I was satisfied that *Alkalies* tho' ne'er so exalted, would do me very little, if any service in the Cure of Diseases.

Al. Then I find you were always inclinable to be a Stickler for one thing or other, First for *Alkalies* then for *Acids*: And what will you stickle for next? For I believe, you will go near to meet with the condition of your promised Recantation, and you must stickle: Well, but you quickly left stickling for common *Alkalies*, I with you had stay'd, and not stickl'd against all *Alkalies*, till you had made some Tryals with Volatile Salt of *Tartar*, which is so much commended by the Chymists. Your Master *Helmant* (to
name

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name no little Men to you) commends it, and all fix'd Salts volatize'd, at a great Rate, Pag. 386. *Fixa Alkali si volatiliter Magnorum Pharmacorum potestates adequent—Quippe in Infusionis, resolutionis, & absterfionis delata usque ad limen quartæ digestionis, renitentem coagulatorum in vasibus fundamentaliter tollunt.* And is pity you were at so vast Trouble and great Expence to no purpose. But at last by Dayly Observations you were satisfy'd the most exalted Alkalies wou'd do you little, or no service in the Cure of Diseases. This is very fine, that you could make Daily Observations, of the insufficiency of those things you never saw, nor knew used. The fix'd Salt of Tartar Volatilized, is not the onely Volatile Alkali you never saw, but there other Noble Volatile Alkalies you never heard nor dream'd of, much less can imagine, what can be done by them: I will undertake to oppose one to all your Acids. For instance, The Quintessence of Wine, you shall use nothing but Acids, I nothing but this, and if I don't do most Cures, you shall be my Master, and I will become an Acid Disciple. But pray you Sir, let us have a little farther account of what things you take to be Acids, and what Alkalies; for you have said, an exact knowledge of the *Materia Medica*, is an absolutely necessary Qualification for a Physician, and that you shou'd be unwilling on any occasion, to prescribe a Medicine the manner of whose Operation you are unable to give an account for, which I have a shrewd guess you have always done.

Ac. almost all the Products of the Vegetable and Mineral Kingdoms are Acids, and there are manifest Acids, and occult ones; some work By Stool, others by Urine; some Diureticks, others Diaphoreticks; some Emeticks, and others are Alteratives; having no visible sensible Operation. I may without Presumption, reckon all sorts of Balsams Pinguedinous and Oleous Substances among the number of Acids; by Reason that in the most bare, and simple Distillation, they afford large quantities of Acid Substances; nothing that is *alkalium*. Bread the Staff of Life, by Distillation yields a large quantity of Acid: Sugar tho' in Taste it seems nothing less, by a Philosophical Management appears nothing else, but a Congestion of Acid Particles. All Metalline Sulphurs are to be rang'd amongst the number of Acids; being nothing but a Congestion of Acid Particles.

Al. If almost all the Products of the Vegetable and Mineral Kingdoms are Acids, we need not care what we give; we can't miss giving acids. But what will you do for your five Principles, I doubt they will be so occult that you can never find them. But your occult Acids that have no visible sensible Operation, will be found to have no visible or sensible Effects, as Acids; and so will never

never appear to be *Acids*: Those divers Operations you ascribe to *Acids*, are not the Effects of Acidity: You never saw an *Acid* Vomit or Purge, but you must be beholden to some Particles of another Nature, to whom those Effects are to be attributed. To say such an *Acid* Purges, such another Vomits, is as profound Philosophy, as to say, such a Bottle of Sack Purges, such another Vomits, when it is the Particles of *Gallæ* in one, of *Antimony* in the other, that does the Business. As for *Balsams* (which you discommended, speaking of *Consumptions*) *Pinguetudine* and *Glaci-ous* Substances, I will excuse your Presumption, for it is from Ignorance you say they are *Acids*: Every Chymist knows, That they yield by Distillation some none, others, but very little *Acid*, but the greatest part of them is *Oyl*. Tho' Bread the Staff of Life Distilled, yields a great deal of *Acid*, which may be of use in some Operations, its more grateful to the Stomach when it comes only from the Oven, than when its drawn from the Retort, which makes it a Sword of Destruction, rather than a Staff of Life, if taken inwardly; However Sugar by Distillation, or Fermentation, may be brought to an Acidity by such a Philosopher as you; yet I can shew you by a more Philosophical way than any you ever walk'd in, how to make either a fix'd or a volatile *Alkali* of it, and as strong ones as ever you saw. But you must burn your Fingers at common Chymistry a little if you will be a Chymist; before its fit to teach you any thing Uncommon: *Sulphurs* I have told you, are separable into an *Acid* and an *Oyl*, and so can't be nothing but a Congestion of *Acid* Particles; and *Oyls* are far from being *Acids*. But whether there are any *Sulphurs* of Metals, or what those dogged Bodies consist of, or how they differ, I dare affirm has hitherto been occult, and out of the ken of any Ass-Ey'd Pretender in *England*.

Alc. I could rang my self into the Mineral Kingdom, but the different Operations of them are so well known to every Body, I think it needless to take any particular notice of them; yet this much I will presume to say, That after having made all the Enquiry into the Nature of Metals, that Humane Industry is capable of, I am perfectly satisfy'd that they differ one from another onely in Degree of Purity, and therefore for ought I know, the business of Transmutation is not so Ridiculous a Thing as some would make it.

Alc. Now Sir *John* you have said all. For if you have made all the Enquiry into the Nature of Metals, Humane Industry is capable of; and tell us also that the business of Transmutation is not so Ridiculous a Thing as some make it. We can't do less than believe you have the Philosopher's Stone, besides all other Metalline

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talline Arcanums. For the greatest Adept Prince or Potentate, never made more Enquiry into these things, than Human Industry is capable of. But I admire your Boldness, how you dare so openly disclose your self. But since you have said so much, I hope you will let us see Transmutation, and convince the Unbelievers. But whatever you may persuade us about the Transmutation of Metals, I doubt we shall never see Mr. Acid Transmuted into a Wife and Modest Man, that's contrary to the Nature of his Composition. And tho' you tell us the different Operation of Metals is so well known to every Body: I tell you there are scarce Six Men in England that know so much of Metals, as to reduce them dexterously out of their Oars, and perhaps not two (setting aside your self) that know any thing of making a true Medicine of these Bodies. But Sir, if you have such a large Knowledge, possibly you may have the *Alkabeſt* too, and when you talk of *Alkalies* being so universal a Destroyer, you make us fancy it may be made of that; but like a Cunning Adept, to hide from us the Subject Matter: You every where dissuade from meddling with *Alkali*, but you would do well to be so kind as to undeceive us poor Seekers.

Ac. The *Alkabeſt* that universal dissolvent, is a thing has made a very great noise in the World, and tho' many People have been at vast Charge in quest of it, yet I have scarce met with any one (except one Person) in our time, who has been Master of it: but upon some late Experiments made upon the *Pyrites*, I am perfectly satisfy'd the said Noble *Menstruum* is with very little Trouble and Charge to be obtain'd, from this so Common, yet most Valueable Subject! I have already procur'd a *Menstruum* from it, that will readily dissolve all the Metals and Minerals I have met with, but the utmost Extent of it I do not know; but as soon as I do, the World shall have an Account of it. I have mention'd this for the sake of some honest *Virtuosi*, who will be very glad to be inform'd of the Subject from whence this Noble *Menstruum* is to be obtain'd. I have reserv'd but one Secret in my Book Of the Gout, and that is a Medicine obtain'd from the *Pyrites*; and to all those that will but give themselves the trouble of nicely enquiring into the said Stone (which to me seems one of the greatest Mysteries in Nature) the said Secret will very easily be Discover'd.

Al. Good News for poor Chymists! But thanks to the Honest *Virtuosi*. The *Alkabeſt* is to be had with very little Trouble and Charge from the Mystical *Pyrites*. Mr. Acid has got a *Menstruum* already from it will Dissolve all the Metals and Minerals he has met with, if you will believe him: (But I dare lay a Wager against it.) And a Secret for the Gout, which we may easily Discover by a little nice Enquiry. Doubtless this Noble *Menstruum* and

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and the *Alkaleſt* alſo, are *Acids*, for all the Noble Menſtruums he knows are *Acids* in the Three Kingdoms. But thus *Acid* will be the *Univerſal Deſtroyer of Bodies*, being the *Univerſal Diſſolvent*. But pray you Sir, are there no *Alkalies* in the Mineral Kingdom?

Ac. *Aſenick* is the higheſt, and moſt exalted *Alkali*, as *Oyl of Vitriol* is the moſt exalted *Acid*. As for the external uſe of *Aſenick*, I know nothing experimentally, but being a thing of pernicious conſequence inwardly taken, I ſuppoſe it can have no very friendly operation externally apply'd. Internally taken, it cauſeth Vomitings, Convulſions of the Stomach, cold Sweats, Palpitations of the Heart, Swoonings, violent Thirſt; and ſeems to be a direct enemy to Life; which it fails not ſoon to deſtroy: All which Effects it will not fail to have, given in never ſo ſmall a quantity. And thoſe People who have been ſo vain, as to pretend to correct the poiſonous quality of *Aſenick*, ſo as to convert it into a good, and ſafe Medicine; have attempted it only by the means of *Acid Salts*: as *Seaſalt*, *Niter*, *Tartar*, *Vitriol*, &c. wherein I cannot tell whether any man has been ſo happy as to ſucceed. To prove *Aſenick* to be an *Alkali*, and as ſuch the cauſe of thoſe dreadful Symptoms attending thoſe that take it; I give you this Relation. A certain Young-woman taking a large quantity of *Aſenick*, was immediately attended with all the moſt violent Symptoms imaginable: A Doctor gave her large quantities of *Salad-oil*, the uſual Remedy, without the leaſt abating the Symptoms; upon which he gave her the *Juice of Lemons* plentifully, which ſoon took off thoſe direful Symptoms; tho the operation of the *Acid* might be impeded by the quantity of the *Oyl* ſhe had taken before.

Al. What you mean by exalted *Alkalies*, or *Acids*, I don't know, unleſs moſt volatile, or moſt ſtrong. But as for *Aſenick*, it is far from being the moſt volatile or ſtrongest *Alkali*; neither is *Oyl of Vitriol* the moſt volatile or ſtrongest *Acid*. But whatever *Aſenick* is, it will not produce its effects in the ſmalleſt quantity, having been given as a Medicine, a grain or two in ſome caſes. Neither have all thoſe People who you ſay have been ſo vain as to attempt to correct it, done it by *Acid Salts*. For I my ſelf have a Medicine from it, wherein is not a grain of any kind of Salt, which I can give to the quantity of a ſcruple, or more, to good purpoſe, in ſome caſes; giving Nature no ſuch diſturbance as is common in the uſe of many vulgar Medicines. And outwardly I have uſed Preparations of it, doing in ſome caſes what I could never do with any thing elſe; never ſeeing any ill effects of it. But that *Aſenick* is an *Alkali*, and produces its evil effects as ſuch, is but your Fancy, not knowing what it is. Your Argument to prove it an *Alkali*, is ſuch a ſlight one as you uſually give for other things. A Per-
ſon

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son took *Arsenick*, and was not presently cured by taking Oyl, but was by taking Juice of Lemons, I answer; the thing to be done in this case was, to get the *Arsenick* out of the Body as soon as possible; and till that could be done, to hinder its operation upon the coat of the Stomach; to both which intents Oyl was proper: and when the *Arsenick* was vomited all up (if timely done) then the Symptoms would cease. Now the discharge of the *Arsenick*, and defence of the Stomach, must in all reason be attributed to the Oyl, not to the Juice of Lemons, which was given upon it; it having no power to work upon, or alter the corrosive nature of *Arsenick*, which is a body that makes no effervescence with *Acids*, nor does it turn Syrup of Violets green (the ways you try *Alkalies* by) but is a very sulphurous Mineral, and Sulphurs consist partly of an *Acid*, which may be separated from the *Arsenick*; and certainly that which contains an *Acid*, and has none of the signs of an *Alkali*, cannot be the strongest, or most volatile *Alkali*. But *Alkali* being fix'd upon in your Hypothesis for the Principle of Death, and *Arsenick* producing such mortal effects, you presently concluded it an *Alkali*. And were you not resolved that whatever is good must be an *Acid*, and whatever is bad an *Alkali*; you could not be so ignorant of the nature of things, and so contradict your own Principles as you do, in almost all your Prescriptions, giving *Alkalies*, *Absorbents*, or other Mitigators of *Acids*. For instance, *Steel* and *Cinnaber* before mention'd, *Lapis hematitis*, which is a Mineral of Iron, from which you never got a grain of *Acid*, yet you highly commend it, and give it not first turn'd into *Vitriol*, *antimonium diaphoreticum*, [that is, *Antimony* and *Niter* fix'd together, and it is well known that *Niter* with all sulphurous Bodies, is turn'd into a fix'd *Alkali*, some of which *Alkali* remains in the fix'd Powder of *Antimony*, notwithstanding the lotions.] *Cochinel*, an Animal, abounding with Volatile Salt, Vinous Spirits, Aromatick Oyls, and divers other things, which will much take off the edge, if not wholly blunt your *Acids*. You cry out against the nauseous Tribe of *Alexipharmacks*, which you say are very rarely of any other use than to send the Patient to his long-home; and yet prescribe *Theriaca*, *Androm.* *Diascord.* *Confect. de Hyacinth.* *Aq. Theriacalis*, *Epidem.* *Lactis Alex.* *Cinnam.* *Mirab.* &c. all sorts of Aromaticks. So that I profess, if you had not declar'd your self an *Acid* Doctor, I should hardly have smelt you out by the Prescripts you have published. And I suppose you have given us those that you think will do your Cause the most credit. Yea, I remember you have commended as an admirable Remedy, and the next thing to your Balsam, in the Gout, a *Lixivium* (as you call it) of Cows-Urine and Sea-Salt; when every body knows Urine is full of Volatile Alkalous Salt: and Sea-Salt it self, in its natural form, has not the effects of an *Acid*.

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Ac. It is, I suppose, allow'd by all, that *Sea-Salt* is an *Acid*: For which cause, we that eat *Flesh* can't live without it: For *Flesh* abounding with *Alkalous* Salts, they are in a measure lock'd up by *Sea-Salt*. And People who lived before the Flood, 'tis to be believed, did not eat *Flesh*, but liv'd upon *Vegetables*; which, I suppose, was one great reason of their long *Lives*: If they had eat *Flesh* as we do, I can't imagine what they would have done for *Salt*. For supposing *Dr. Burnet's* Hypothesis true, which I see no reason to doubt of, I suppose their *Rivers* must have been void of *Saltiness*; and for them to have eaten *Meat* without *Salt*, must have prejudic'd their *Healths*, and shortned their *Lives*. As we saw in the *Irish* Wars, by eating *Meat* without *Salt*, whole *Regiments* were swept away by *Fevers* and *Fluxes*. Now the *Antidiluvians* eating *Vegetables*, had no need of *Salt*; there being a sufficient quantity of *Acidity* in them to confirm the texture of their *Blood*. Farther note the efficacy of *Salt-water*, to prevent the dreadful *Symptoms* of persons bitten with mad *Dogs*. On which occasion also, a *Child* at *Worcester* was cur'd of a *Tympanitis* by being dipt with others, also bitten by a mad *Dog*; who not many hours after she was dipt, piss'd several *Quarts*, and was perfectly cured. And a *Person* in *Herefordshire*, I am told, has cured several by the same method. Common *Salt*, I allow, will excite *Thirst* not quatenus *Acid*; for *Spirit of Salt* will take it off: But I assure you, I have stumbled more at this thing of Common *Salt's* exciting *Thirst*, than any thing else besides, and therefore have spar'd no *Cost* to find the *Reason*; but at last, after much *Labour* and *Sweat*, I found there was no *Salt* but had more or less of a damn'd thing call'd *Bittern* mix'd with it. Now this *Bittern* is the most corroding fix'd *Alkali* in nature; and tho it be inconsiderable in quantity, in respect of the *Acid*, yet it will fix it self on the *Parts* after the *Acid* of the *Salt* is all dissolved, and so excite *Thirst*.

Alk. It is so far from being allow'd by all, that *Sea-Salt* is an *Acid*, that I know none that can taste will allow it, except you *Mr. Acid*, who are either resolved to deny your *Senses* to serve your *Hypothesick* Fancy, or have so us'd your *Mouth* to *Acids*, you can taste nothing else; as *Persons* in some *Distempers* taste every thing bitter. But let the healthy *Country-man* taste it, and I will engage he will not say 'tis sour. That it may be by the *Fire* changed into a sour *Liquor*, is no better an *Argument* that it is now sour, than that *Sugar*, because it may be turn'd into *Vinegar*, is *Vinegar*; or into an *Alkali*, is an *Alkali* already; or that an *Ass-ey'd* Doctor is a wise man, because possibly he may learn *Wit*. It is not true, that those that eat *Flesh* can't live without *Salt*: for not only divers kinds of *Animals* that live wholly on *Flesh* eat no *Salt*, but abundance of *People* in *North-America*, who live very

very healthy, and strong, and mostly upon Flesh, have no Salt a tall; as *Hemipen* tells us in his late account of those Parts, and I don't question but we might do the same were we accusom'd to it, without hurting our selves by *Alkali*. Neither do we use Salt to lock up *Alkali* in Flesh, which it will not do; *Sea-Salt* no way uniting with, or retaining volatile *Alkalies*, except it is first turn'd into an *Acid Spirit*; as you may easily see, either by distilling *Salt-meat*, *Urine*, or *Sea-Salt*, and a volatile *Alkali* mix'd together. But we use Salt to preserve and relish our Meat, neither of which would be done by its *Acid Spirit*. Nor can the *Longevity* of the *Antediluvians* be ascrib'd to their living upon Vegetables, much less from an *Acid* in them, when all Vegetables that are commonly eaten turn into an *Alkalous Chyle*. And if living upon Vegetables would so much conduce to long Life, why have not some in our time, who would eat nothing else, lived longer, or at least more healthy, than others? And tho you, not doubting of *Burnet's Hypothesis*, can't imagine what they would have done for Salt before the Flood, yet I and others, not doubting of *Moses's Hypothesis*, can very well imagine, That they might have had Salt to relish divers sorts of Vegetables, as well as for other uses, from the Sea, from Fountains, or from the Rock the original of that useful Body. As for the Cure of Persons bit by mad Dogs, by dipping; it cannot be well thought to depend upon the Saltiness of the Water, much less on the supposed *Acidity* of the Salt: If it did, why would not the drinking Salt-water, or Spirit of Salt, or washing with them, rather do the Cure; which has not been found effectual. But the reason of this, is more rationally thought to lie in the blotting out and destroying, or preventing the Idea of Rage, by the contrary Idea of Fear impress'd upon the Spirits of the Persons bit. Which is apparent from the manner of dipping, as I have had the Account from Persons dip'd; which is till the Person has an apprehension or fear of being drowned: Therefore they dip some twice, some thrice, more or less, as they find them fearful, or courageous. On the same account, dipping might provoke Urine, and so do something towards curing the Dropsy. And I believe the inducing a contrary Idea, would be a more effectual way of curing other sorts of Madness, than any of the common Methods; if Physicians would give themselves to consider of, and put in practice the several ways, and means by which it might be done. I agree with you, That Salt does not excite Thirst *quatenus Acid*; because that would be to do it *quatenus* what it is not; neither does it do it *quatenus Alkali*. And tho it has cost you so much Money and Sweat, to resolve this stumbling Question, you must stumble, and Sweat again, or remain under a Mistake. For the Damn'd thing *Bittern* (to repeat your Beauish Expression) is

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not where, and what you suppose it: First it is not in all Salt; for it is that which will not shoot with the Salt into regular Grains, and if Boyl'd up, will not continue in a dry Form, but runs into a Liqueur in the open Air. Therefore that Salt that is shot into its proper Chrystals and keeps dry, has no *Bittern*. But if this won't do, Distill your Salt into an *Acid Spirit*, and then you will be satisfy'd there is no fix'd *Alkali* in it: Turn this Spirit into Salt again, the same in quantity and Quality (as every Chymist knows how) and this Salt shall make you as Thirsty, as any other Common Salt. Secondly *Bittern* it self is not the most corroding fix'd-*Alkali* in Nature, for tho' it will turn Syrup of *Violets Green* (as *Allum* also doth) more readily than Common-Salt; yet it is not corroding as an *Alkali*, as any one may Try by Tasting it, and the mildest fix'd *Alkali*, and they will find a difference, much more between this and the most Corroding ones: Nor is it a fix'd *Alkali*, for it will rise in the Fire, and come over good Spirit of Salt, even *per se* without any addition of Earth, leaving nothing behind but a white insipid Earth, which will not so much as make an *Effervescence* with *Acids*; Neither will *Bittern* fix it self on the Parts after the Salt is dissolved, for it's dissolved much sooner than Salt it self. Thus you see Sir, by a little Skill in Chymistry your Damn'd fix'd *Alkali* is become a Blessed Volatile *Acid*. But *Bittern* in its Natural Form just Boyl'd up into a dry Form is but a *Salsum*, not fermenting with *Acids* much more than Common-Salt will, and may be taken in as large a quantity as Common-Salt, producing no more Thirst than that does. But you are such a Slave to your Hypothesis, that every ill Effect must needs be attributed to an *Alkali*, even as far as to make Poysons *Mortiferous* merely as *Alkalies*; as you have Asserted in *Arsenick*. And I hear, also you have the same Opinion in Animal Poysons, as that of the Viper, which if it be an *Alkali*, and therefore a Poyson, I shou'd think, a far more exalted one than *Arsenick*, and Damn'd one than *Bittern*, performing its violent Effects in far less quantity. What say you is it your Opinion?

Ac. Yes, And for a farther Confirmation of my Doctrine of *Acids*, you have the Cure of one Mr. *Phillipson*, that shew'd a Collection of Rarities, who was Bitten by a Viper, and Cured in a few Days by *Acids*: Which Cure, considering the Symptoms (which were as severe as possible) I may without vanity say, There has not been a more Extraordinary Cure wrought in so short a time. Now if the Poyson of the Viper did consist in a volatile *Acid*, as some wou'd make us believe, How is it possible the Symptoms could be taken off by giving *Acids*, and that in such large quantities? Nay, had it been *Acid*, it's reasonable to think the Symptoms would have been Aggravated. So in a Relation Dr. *Stubbs* gives a Person Bitten

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Bitten by an *Adder*, was Cured by the *Mixtura simplex* a Noble *Acid*. And *Lemery* in his *Course of Chymistry*, confesses, That the *Viper* does more abound with Volatile (*Alkalous*) Salts, than most other Creatures; by reason of the closeness of the *Cutaneous Pores* hindering *Perspiration*, and that their *Poyson* consists in an *Emission* of a very great quantity of Volatile-Salts at the time of their being enrag'd. But then to square with the *Vulgar Opinion*, he tells us, Those Volatile *Alkalous* Salts are instantaneously at the time of their *Emission*, during the time of the *Viper's* short *Rage*, turn'd into *Acids* of the most Volatile Nature; which is such *Jargon*, the *Transmutation* of Metals to those that are its greatest Enemies, is a Jest to it. *Charas* also gives us an Account of a *German* Bitten at his House, who after all the pother that he makes about his Volatile Salt of *Vipers*, was Cured not without great Hazard and Trouble, by the intermixture of many other Medicines and those even *Acids*, as *Treacle-Water*, *Citrons*; but those *Acids* could not be so effectual, by reason of the *Alkalies* given him.

Al. The Recovery of *Mr. Phillipson* was not so speedy, nor what you did towards it so apparently Effectual, as to give you just occasion to Brag of so great a Cure: Nay, you cannot certainly prove to your self, or others, That what you did, did the Cure, and that other things did nothing towards it; yea, or that he would not have been well as soon, or sooner without any of your *Acids*. The Patient himself said, He could not tell whether he had any benefit by what you gave him. But I am sure, had he had some more proper Things, or even the *Viper-Man* for his Doctor, he might have been well sooner than he was. But let us suppose the best we can of what you did, and take what you borrow from *Dr. Stubb*, and *Charas* together; you do not make an Argument out of all sufficient to make a Considerate Man believe, that the *Poyson* of *Vipers* consists in an *Alkali*. Suppose you did do the Man some little good, and *Dr. Stubb's Mixtura simplex* were an *Acid* (which if it were that of *Paracelsus*, I deny, being but a *Salsum*) and *Charas's Alkalies*, were not so soon Effectual on the *German*; but wanting Patience and larger Doses, they gave some *Acids*, I say suppose that the *Acids* did some good, it will not follow, That the *Venom* of *Vipers* is an *Alkali*. For if an *Acid* has done some things towards the Cure of the Bite, in one or two Cases, you can't deny but that *Alkalies* have done it in many. For tho' in some Cases *Acids* were used, they were not used alone, and so could not certainly demand the Credit of the Cure. But you have many Cases, where the Volatile Salt used without *Acids* Cured. Can it be suppos'd Volatile *Alkali* Salts did the Cure, if the *Poyson* were nothing but a Volatile *Alkali*? Or, did you ever see any Volatile *Alkali* in so little (yea or in a large) quantity,

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rity, put into a Wound, and produce such dire Effects? No, the Infusion of Volatile *Alkali* in an Hundred times the quantity into the Veins will not do it, or so much as cause a Disorder. Can the Poyson of Vipers consist in a Volatile *Alkali*, and their whole Body abound therewith, and yet their Flesh be wholesome Food? No surely. Can the Poyson of Vipers consist in an *Alkali*, and yet be Cured by an *Alkali*? And that even by an outward Application: As I my self have seen in the following Experiments I some Years ago was Assistant in the making of, at the Honourable Mr. Boyle's, which were made upon Pullets and Pigeons, thus, We pluck'd the Feathers off the Breast of one of them, and taking a Viper when he was enrag'd, we caused him to Bite; letting the Fowl go, he Dy'd in three or four Hours. Then we took another and caus'd him to be Bitten in like manner, by an enraged Viper, and apply'd the Viper-Stone to the Wound, which not only prevented Death, but all the dire Symp'toms the other Fowl Dy'd with; which Stone being taken off after some time, the Wound was Healed by ordinary means. Now this Stone is an Arid-Body, making an Effervescence with *Acids*, which could not have such great Effects in the Biting of Vipers, if the Poyson were an *Alkali*, and to be destroy'd by an *Acid*. But tho' the Poyson of the Viper can't Rationally be thought to be an *Alkali*; yet neither do I think this Poyson consists in an *Acid*. Those Persons that have ventured to Taste the Liquor in the Viper's Gums, tell us nothing of any Acidity, or Alkalous Taste, nor give us any Experiments to confirm their Opinion of its being an *Acid*. Nor do we see such Mortal Effects of so small quantities of either *Acid*, or *Alkali* in Wounds. But this Poyson doubtless does consist in something more subtil than any of these manifest Qualities. The Ingenious *Lemery*, I confess, is of the Opinion that the Poyson, of the Viper is an *Acid*; but he (nor no Mortal I believe) has any such *Jargon* as you falsely accuse him of, who is a Man capable of Teaching you *Pharmacy* this Seven Years yet. To shew how grossly you have abused him, I will recite his Words in this matter: I conceive, says he, what they call the Venom of Vipers, consists only in the abundance of *Acid Volatile Salts*, which the Animal throws out when it Bites, and these Salts passing into the Veins and Arteries, coagulate the Blood and hinder its Circulation, and the course of the Animal Spirits, even as it happens when an *Acid Liquor* is Syring'd into a Vein, which may be sufficient to explicate all the Accidents which happen upon the Biting. And afterwards saies he, The difference between the Effects of an *Acid Liquor* syring'd into the Veins, and those of the Venom of Vipers is this, an *Acid Liquor* being immediatly infus'd into a large Vessel fixes all the Blood of a sudden, and causes strong *Convulsions*, which are follow'd shortly with

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with Death : Whereas the *Acid Salts* that flow from the Viper when he Bites, do not Work so quickly ; their Acidity being probably not so strong as that of an *Acid Liquor*, and have long passage into the Mass of Blood : And there's one Circumstance, adds he, which makes my Application still more probable, That the best Remedies used for such as are Wounded by Vipers, are those that destroy *Acids*, and dissolve the Coagulation of the Blood, as *Volatile Alkali-Salts* drawn from Animals. But to understand this more fully, continues he, it's fit to consider several things, First, Vipers are more fill'd with *Volatile Salts* than other Animals, and so not think it strange that they throw out much of it in their wrath. Secondly, Tho' these Salts turn *Alkalies* by Distillation, they are *Acids* in their own Nature, before the Fire works upon them, as I have said when I spoke of the Principles. Thirdly, Vipers are covered with a close compact Skin ; so that the Salts they contain do Circulate and Subtilize much better, and do Evaporate less than other Animals. Fourthly, The shape of the Viper being long, straight, and round, like a small Gun, the Salts they throw out in the Biting are driven with much more violence, than if they came from a more open place. Fifthly, The two long Teeth of the Viper being straight and sharp, make deep Wounds, but which shut up so quickly, the *Acid-Salts* which enter, have no passage to come out. But it may be Objected farther, saies he, If the Venom of Vipers proceed from their *Volatile Salts*, then the Salt of Vipers shou'd increase, rather than Cure the Malady. Answer, *Volatile Salts* which flow from Living Vipers, and enter the Flesh by the Bite, are very different from those drawn by the Fire from Dead ones, which are taken at the Mouth, the first are Naturally pointed, *Acid*, and Coagulating ; the others have been blunted by the Fire, and rendred Poreous, are *Alkalies*, very Rarifying, or Dissolving, so are qualifed to break and destroy the first. Secondly, The *Volatile Salt* of Vipers taken at the Mouth, has another determination then that which enters the Flesh, and so produces different Effect ; not being forc'd in its Motion, spreads every where, and dissolves the Coagulum the other had made in the Blood. Thus much I have Transcribed, not for the sake of *Lemery's* Opinion, seeing no ground to believe the Viper abounds with *Acid Salts*, but out of love to Justice, that it may be seen how the Abuser of all his Betters, has abused this Author in particular. But I have one thing more comes into my Mind to tell you of, Mr. *Acid*, since we are Talking of Wounding, which is that I have heard, you have formerly Boasted great Things in Chirurgery, and have Wrot a Book call'd *Novum Lumen Chirurgicum*. What is there in it pray you Sir ?

Ac. There's nothing but Truth contain'd in my *Novum Lumen Chirurgi-*

Chirurgicum, and it's Built upon a pair of Medicines, the one Internal, the other External, which I did not think fit to make publick. But here lies my Misfortune common to all those who make new Discoveries; a great many believe the Truth of what I said, that my Medicines will perform what I promised; but amongst those who believe matter of Fact, many say, This Man was not the Author, others, that they have the same Medicines. I very well know it's the Nature of most Men not to allow any Person the Honour of his own Discoveries. But my Medicines are entirely New, and will stand the severest Test, and I am certain my Medicines will Cure any Wounds, whether in the Flesh, or in the Cavity of the Body: Where as dangerous Wounds were ever Cured by former Applications, and that with much greater speed and safety to the Patient; since they prevent *Feavers*, and Mortifications: My Medicines if timely used, Cure all sorts of Wounds without Suppuration, but where Suppuration is begun, are the best Digestives now known. But all Probes and Tents, all Digestive and Suppurating Medicines, all Cauteries and straight Ligatures are Injurious and Procrastinate the Cure. To shew wherein lies the unreasonableness of common Methods of Chirurgeons in the Cure of Wounds, wherein they hinder and oppress Nature in her regular Operations, let a Wound be made where it will, and how, whether by Cutting, or Contusion, it matters not, the Nutritious juice is brought immediately to the extremities of the wounded Vessels. Now all the Medicines made use of in the common Methods of Chirurgery relax the divide Fibers, that they can't retain the Nutritious Matter, but let it pass into the Wound, where by the same Medicines it's turned into the Substance commonly call'd Matter, and this Corruption can't be without a sort of Fermentation, and the Fermenting Particles fret the Fibers, cause Inflammations, and by entering the Blood, and dividing its Texture cause *Feavers*. Now it's evident, whatever will cause Pain such as will create a *Feaver*, must be of a Heterogeneous Nature, and an Enemy to the Body (for I positively believe it's from the Medicines apply'd, only are occasion'd all those ill Symptoms that attend Wounds) to which it's apply'd, or into which it's receiv'd. The truth of which, the nature of a *Feaver* is sufficient to confirm, which is in the Terms of many great Men nothing but a *Nixus Natura* to throw off its Enemy. And a Late Learned Author in a Treatise of Intermitting *Feavers*, the only Rational Piece in my Opinion that ever was Writ upon that subject, plainly makes it appear, That the Seat of *Agues* is in the *Cortex* of the Brain, from whence at certain Periods of time, the Matter is thrown off by the Nerves to all the Parts of the Body, which causes the coldness; this Matter afterwards received into the Blood by the Capillary Veins being He-

roge-

terogeneous to it, puts it into a violent motion, which ceases not till the matter is thrown off by the Pores. Now after the Chirurgeons have generated Matter (tho' many times instead thereof they cause Mortifications) they then use mundifying Medicines, and when Nature is oppressed, leave her to do her own work. This is their practice in External Wounds, but what is to be expected where the Lungs, Liver, Guts, &c. are wounded? Here they own their Medicines insufficient, and if any so wounded chance to recover they count it almost miraculous. But I leave it to every Man's judgment which method is best to be confided in, either that where scarce one in ten miscarieth as in mine, or where not one in ten recovers as in the Common Method of Chirurgeons: Besides there remains another thing, that is when any large Blood-Vessel is wounded how to stop the Flux of the Blood which they can't do without actual, or potential Cauteries, whose inconveniences every body knows; and strict bandage often causing Mortifications. But the methods I use are short and easie, thus; I make a solution of my Powder in Water, or for want of it in Urine, and squeeze or inject with a Syring into the Wound if it be deep, then close the Wound, and if large, stitch it up and lay a Pledget upon it. If any large Artery be cut, I hold the Pledget close with my Hand till the Flux of Blood ceases which will be in a small time; then bind it on with an easie ligature, and give my Tincture in Wine. Now to prove my Medicines agreeable to the nature of Humane Bodies, and of that Juice by which I conjecture the Body is nourished, and more efficacious than the Medicines used by Chirurgeons, the following Arguments will evince. 1. They never cause Pain unless just at the Application, and that very little more than would be caused by Spring Water. 2. No Pain afterwards. 3. If there has been Pain before, it has been taken off in a short time. 4. There has never been any Fevers be the Wound external or internal. 5. All incised Wounds are cured if timely used in a few days time, without Suppuration: Gun-shot Wounds in fleshy parts are cured after the same manner, only require longer time. And by my Medicines most wounds within the Cavity of the Body may be cured with all the ease imaginable. For Instance Experiment, 1. *John Mahulton.*

Al. Hold Mr. Acid, let your Experiments alone now, you may tell them to the Physicians and Chirurgeons that were in Flanders with you, and saw them made. *Seeing is believing,* they say: But I who have not seen shall hardly believe you did any Miracles, or that all contain'd in your *Novum Lumen Chirurgicum* is true. Because I know your pair of Medicines, not capable to perform such Wonders: The very appearance of which *Arca numis*, is enough to Extinguish your *Novum Lumen*, Your T

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cure of the *Sulphur of Venus*, as you falsely and foolishly call your Internal Medicine, and your Powder, are not your Invention; but Originally *Rebel's*, I might say, every Bodies: The one being nothing but Spirit of *Roman* or *Dantzick Vitriol* Twelve Parts mix'd with Spirit of Wine Eight Parts: And the other nothing but *Roman Vitriol* Calcin'd to Whiteness, which you Colour'd with a little Dragon's Blood: And we know how you come by these Secrets: These are the great Medicines you would so fain steal the Honour of being thought the Inventer of! These are your fire-new Medicines! The Birth of the Mountains! And least you shou'd deny this (being given to the faculty) any one that understands any thing of Chymistry, may know your Tincture (as you call it) if not by Sight and Taste, by bare Distillation. And as for your Powder, let them Dissolve it in Water, the Dragon's-Blood (if you still Colour it) will not Dissolve, but may be separated, and put upon a hot Plate, is known by the Smell: Let them put some Urinous Spirit to the Powder, it will presently discover the Copper by its Blew Colour, and every Body knows by the Taste, that it's a *Vitriol*. And now let People judg, whether a little *Roman Vitriol* be so strange a Discovery beyond all hitherto known in Chirurgery? Or whether all Chirurgeons have been ignorant thereof? Whether *Vitriol* will Cure all Curable Wounds inwardly, and outwardly, with more speed and safety than any thing else? If it would, there are better *Vitriols* to be had than this you falsely call, your Invention. Whether Copper Corroded by an *Acid*, with its fretting Astringency be likely to Cure all sorts of Wounds without Suppuration, and yet is the best Digestive in the World. This is like *Acids* making Thick, Thin, Purging, Vomiting, Binding, Loosening, and every thing; because it is *Acid*, and you are in love with it. *Roman Vitriol* Digests, yet hinders Digestion; but only while a Secret in Mr. *Acid's* Hand, if you can believe him. All Probes and Tents, all Digestive and Suppurating Medicines, all Cauteries and straight Ligatures, are Injurious and Procrastinate the Cure: Yet Mr. *Acid's* Digestive does not. But I Answer, Your Digestion-hindering Digestive as well as others, and the rest of the Things you cry out against, may be Injurious and Procrastinate Cure, where Fools or Knaves act instead of Chirurgeons: But in the Hands of Experienced Artifts, all these are necessary sometimes; but when, and where, you are not a capable Judg. Let a Wound be made where, and how it matters not, say you. Here you shew your Ignorance, for Chirurgeons to Laugh at: They well know the place and manner of the Wound, much alters the Indications of cure. That all the Medicines made use of in the common Method

thods of Chirurgery, relax the Fibers, and turn the Nutritious Juice into Corruption, is a false Assertion, by a Person Ignorant of the *Materia Medica*. All the Chirurgeons that I ever was acquainted with, were not ignorant of more kindly Astringents, and better Balsamicks than *Roman Vitriol*. And before ever Mr. Acid was heard of, I my self have healed Wounds, and that in the Joynts, without Pain, Soreness or Corruption, by Medicines that might be taken inwardly in considerable Doses. But *Roman Vitriol*, or any sort of Corrosion of Copper with common *Acids* will cause Pain, and Inflammation in the Wounds; and thence *Feavers*. Let any body try it on himself, and he will be satisfied. Now what will cause Pains and *Feavers*, must needs be of a Heterogeneous Nature, and I positively believe, that it was from your Medicine, that your Patients in *Flanders* had so many ill Symptoms, Nature striving tho' in vain to cast out the extraneous body of Corroded Copper, far more mischievous than Lead or Iron, with which Soldiers more mercifully wound one another. That a *Feaver* is *Nixus Natura* to throw off its enemy might perhaps be believed as a great fancy of Great Men, if they could tell us who *Nature* is. The Late Learned Author of the Treatise of Intermittent *Feavers*, if what you say be true, seems to be a Man of great Brain, and the Seat of *Agues* by him discover'd, a Witty Invention: I wish you had named him, that I might have seen also what he makes the matter of these *Feavers*. I fancy they must be Maggots, who every time they discharge their Bellies after repast, drop down their Excrements through the Nerves, which being of an *Alkalous* Nature dissolved in the aqueous Vehicle of the *Succus Nervosus* causes cold, but being received into the Blood, and Heterogeneous to its *Acid*, causes a Fermentation and Heat, till the Excrementitious *Alkali* is cast out by the Pores. But as for the Chirurgeons when they have generated Matter; then, for want of *Roman Vitriol* they mundifie, and so leave Nature oppressed. *Roman Vitriol* prevents all, and helps all, but I believe Mr. Acid's direction, I would say his Word is the chief thing in the business. Another Man using it will do or tell of no Miracles. But what is to be expected in the Wounds of the Lungs, Liver, Guts? Why here a recovery is counted a Miracle by the Ignorant Chirurgeons, who know nothing of the new discover'd *Roman Vitriol*. But let any Man judg which method is best, that which depends upon *Roman Vitriol* alone, used alike in all differences of Wounds, or that which relies on all sorts of Medicines in the Hands of Artists: Mr. Acid says in the first method not one in ten miscaries, in the last not one in ten recovers. I must tell you Sir, you have not proved by Evident and well

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well attested Experiments, you ever cured any one Wounded in those Parts; so far are you from curing Nine in Ten. If you could have done what you pretended, I can never believe you would have left your famous Practice. As for stopping of Blood, you know well where your *Vitriol* has failed, but let any one that has a mind to be satisfied of its Vertue try it. But you abuse others to say, they can't stop Blood without actual or potential Cauteries. Actual Cauteries are seldom used, or any potential greater than calcined *Roman Vitriol*. But we know better things, Medicines that may be taken inwardly, they are so mild and wholsom, that will stop Blood with much more ease, speed safety, and heal far better when that is done, than your calcin'd *Vitriol*; tho' we never thought fit to Quack with them. Besides every Chirurgeon who deserves the Name, can stop Blood in many cases without any Medicines at all. That your Medicines are as agreeing to the Nature of Human Bodies, and the juice by which they are nourished as Copper is to Flesh, and Oyl of *Vitriol* to Blood; I readily grant, but that they are indeed friendly, your Practice has not proved, we have only your bare Assertions, ask the Marquess of *Carmarthen* else. That your *Vitriol* never causes much more Pain than Spring-Water in the Application, nor any afterwards, takes off former Pain in a little time, suffers no *Feaver*, Cures all incised Wounds in a few days without Suppuration, Gun-shot Wounds in a little longer time, most Wounds in the cavity of the Body with all the ease imaginable. I Answer: First, *Your Method is short*, and your Secrets are known, let whoever will try how sweet. Secondly, Why durst you not go into *Flanders* again? And why did you quit your pretensions to Chirurgery, and take another method of Quacking; leaving your first new Light, to go out like an *Ignis Fatui*, and rub your Cat for another. You began to see at the Siege of *Namur*, that your Chirurgical sham would not take, and therefore had *some reason* for another *Essay*. You found the Practice of Chirurgery too plain, and sensible a work to deceive Mankind in. The Internal part of Medicines is more abstruse, and you may tell People they have a Fire in their Hearts, which is fed by *Acids*; long enough e'er they will have them search'd to disprove you. A Discoverer you would fain be thought, and a Light to the World; but I don't Question, but by that time what has been said, is well consider'd, you will see your self but a falling Star, which appears but in a very little part of his Passage to the Earth. And now Mr. *Acid* you may go home and think: And if possibly you can be perswaded to become Considerate and Modest, and what you have Foolishly said, and done can yet be retriev'd, you will acknowledg me, as I am, no Enemy, but a Friend; tho' I have blunted the sharpness of your *Acids*.

F I N I S.